

# Scientific and Technical Information Center

Requester's Full Name: Sm J. Lee Examiner #: 76060 Date: 5-17-05  
 Art Unit: 1752 Phone Number: 202-1333 Serial Number: 101668,348  
 Mail Box and Bldg/Room Location: 9D66 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, <sup>(pen)</sup> please prioritize searches in order of need.

\*\*\*\*\*  
 Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Plz. See Bib.

Inventors (please provide full names): \_\_\_\_\_

Earliest Priority Filing Date: \_\_\_\_\_

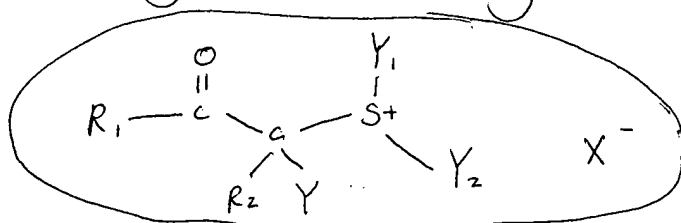
\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

SCIENTIFIC REFERENCE BR  
 Sci & Tech Inf. Ctr.

MAY 19 2005

Pat. & T.M. Office

Please search for a Photoacid generating compound (photoacid generator) having the following structure



① R<sub>1</sub> = alkyl gp (can be substituted)

② R<sub>2</sub> = alkyl gp.

③ Y = alkyl gp.

④ Y<sub>1</sub> & Y<sub>2</sub> = independently represent aryl gp, aralkyl gp or

⑤ R<sub>1</sub> & R<sub>2</sub> may be bonded together to form a ring

⑤ R<sub>2</sub> & Y may be bonded together to form a ring

⑥ Y<sub>1</sub> & Y<sub>2</sub> may be bonded together to form a ring.

⑦ X<sup>-</sup> = non-nucleophilic anion

⑧ two or more of this structure may be bonded to each other at any position via connect group. ~~hetero atom-containing aromatic gp.~~

## STAFF USE ONLY

Searcher: \_\_\_\_\_

Searcher Phone #: \_\_\_\_\_

Searcher Location: \_\_\_\_\_

Date Searcher Picked Up: \_\_\_\_\_

Date Completed: \_\_\_\_\_

Searcher Prep & Review Time: \_\_\_\_\_

Clerical Prep Time: \_\_\_\_\_

## Type of Search

NA Sequence (#) \_\_\_\_\_

AA Sequence (#) \_\_\_\_\_

Structure (#) \_\_\_\_\_

Bibliographic. \_\_\_\_\_

Litigation \_\_\_\_\_

Fulltext \_\_\_\_\_

Patent Family \_\_\_\_\_

## Vendors and cost where applicable

STN \_\_\_\_\_

Dialog \_\_\_\_\_

Questel/Orbit \_\_\_\_\_

Dr. Link \_\_\_\_\_

Lexis/Nexis \_\_\_\_\_

Sequence Systems \_\_\_\_\_

WWW/Internet \_\_\_\_\_

=> file reg

FILE 'REGISTRY' ENTERED AT 15:37:13 ON 26 MAY 2005  
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=> d his

L1 FILE 'LREGISTRY' ENTERED AT 14:30:20 ON 26 MAY 2005  
STR

L2 FILE 'REGISTRY' ENTERED AT 14:34:37 ON 26 MAY 2005  
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L3 STR L1  
L4 7 S L3  
L5 151 S L3 FUL  
SAV L5 LEE348/A

L6 FILE 'ZCA' ENTERED AT 14:41:38 ON 26 MAY 2005  
71 S L5

L7 FILE 'LREGISTRY' ENTERED AT 14:41:47 ON 26 MAY 2005  
STR L3

L8 FILE 'REGISTRY' ENTERED AT 15:24:07 ON 26 MAY 2005  
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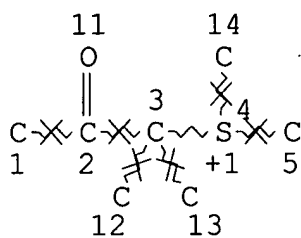
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0 S L9

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65 S L9

FILE 'REGISTRY' ENTERED AT 15:37:13 ON 26 MAY 2005

=> d l9 que stat

L3 STR



## NODE ATTRIBUTES:

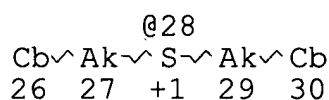
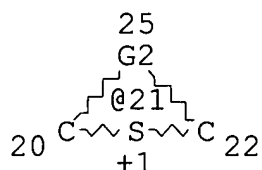
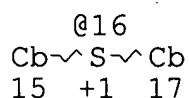
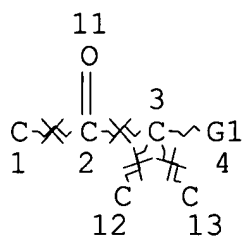
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NSPEC	IS RC	AT	1
NSPEC	IS RC	AT	5
NSPEC	IS RC	AT	12
NSPEC	IS RC	AT	13
NSPEC	IS RC	AT	14
DEFAULT MLEVEL IS ATOM			
DEFAULT ECLEVEL IS LIMITED			

## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 9

## STEREO ATTRIBUTES: NONE

L5 151 SEA FILE=REGISTRY SSS FUL L3  
 L7 STR



VAR G1=16/21/28

REP G2=(0-5) C

NODE ATTRIBUTES:

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CHARGE IS E+1 AT 21

CHARGE IS E+1 AT 28

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NSPEC IS RC AT 13

DEFAULT MLEVEL IS ATOM

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GGCAT IS UNS AT 17

GGCAT IS UNS AT 26

GGCAT IS SAT AT 27

GGCAT IS SAT AT 29

GGCAT IS UNS AT 30

DEFAULT ECLEVEL IS LIMITED

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NUMBER OF NODES IS 19

STEREO ATTRIBUTES: NONE

L9 106 SEA FILE=REGISTRY SUB=L5 SSS FUL L7

100.0% PROCESSED 151 ITERATIONS  
SEARCH TIME: 00.00.01

106 ANSWERS

=&gt; file zca

FILE 'ZCA' ENTERED AT 15:37:23 ON 26 MAY 2005

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

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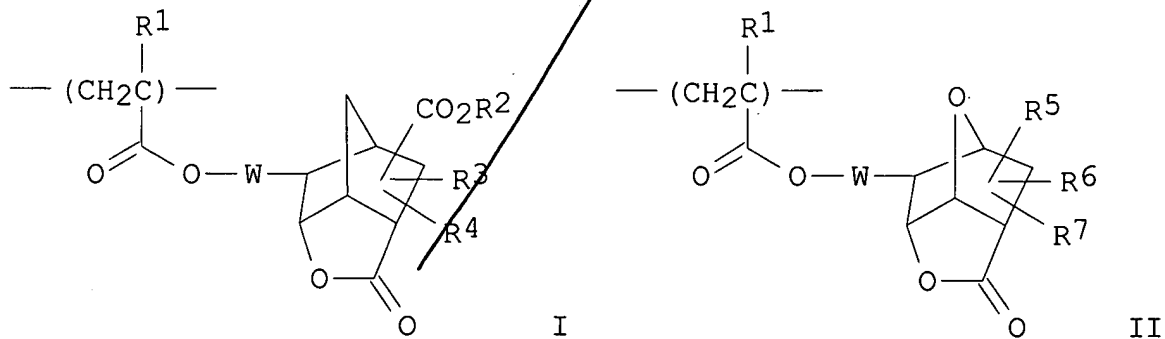
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=&gt; d l11 1-65 cbib abs hitstr hitrn

L11 ANSWER 1 OF 65 ZCA COPYRIGHT 2005 ACS on STN

142:400562 Positive-working resist composition containing norbornane lactone structure alkali-soluble resin and patterning using the same. Sato, Kenichiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2005099456/A2 20050414, 81 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-333504 20030925.

GI



AB Disclosed is a pos.-working resist compn. comprising (a) norbornane lactone-structure alkali-sol. resins represented by I and II (R1 = H, Me; W = single bond, alkylene, ether, thioether, etc.; R2 = alkyl; and R3-7 =H, alkyl, cycloalkyl, etc.), (b) a compd. A1-(A2-SO3H) (A1 = p-valent bonding group; A2 = single bond, divalent aliph. group; and p = 2-4) generating an acid upon receiving an active ray or radiation, and (c) a solvent.

IT 680200-03-7

(acid generator; pos.-working resist compn. contg. norbornane lactone structure alkali-sol. resin and sulfonic acid generator)

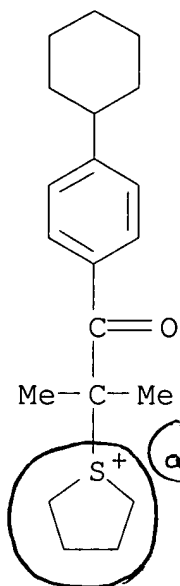
RN 680200-03-7 ZCA

CN Thiophenium, 1-[2-(4-cyclohexylphenyl)-1,1-dimethyl-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 680200-02-6

CMF C20 H29 O S



(all of this type are printed out first ; all other  $\gamma_1$  and  $\gamma_2$  are printed out towards the end.)

CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

 $^{-}O_3S^{-}(CF_2)_3^{-}CF_3$ 

IT 680200-03-7

(acid generator; pos.-working resist compn. contg. norbornane lactone structure alkali-sol. resin and sulfonic acid generator)

L11 ANSWER 2 OF 65 ZCA COPYRIGHT 2005 ACS on STN

142:382176 Positive-working resist composition containing sulfonic acid generator and method of forming pattern using the same. Kodama, Kunihiro; Wada, Kenji; Sato, Kenichiro (Fuji Photo Film Co., Ltd.,

Japan). Jpn. Kokai Tokkyo Koho JP 2005092053 A2 20050407, 62 pp.  
(Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-328062 20030919.

AB Disclosed is a pos.-working resist compn. comprising (a) a resin which has a monocyclic or polycyclic alicyclic hydrocarbon structure and is able to increase its sol. in an alkali developer upon an interaction with an acid, (b) a compd. generating sulfonic acid  $A1-(A2-SO_3H)_n$  ( $A1 = n$  valent bonding group;  $A2 =$  single bond or divalent aliph. group; and  $n = 2-4$ ) upon receiving an active ray or radiation, and (c) a basic compd.  $R250R251R252N$  ( $R250 =$  alkyl;  $R251, 252 = H$ , alkyl, cycloalkyl, aryl, may form ring together).

IT **680200-03-7 848408-12-8**

(pos.-working resist compn. contg. sulfonic acid generator)

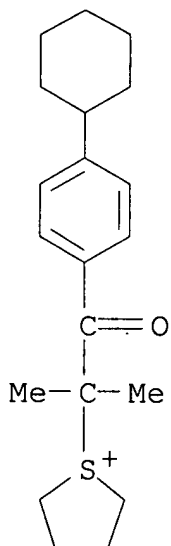
RN 680200-03-7 ZCA

CN Thiophenium, 1-[2-(4-cyclohexylphenyl)-1,1-dimethyl-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 680200-02-6

CMF C20 H29 O S



CM 2

CRN 45187-15-3

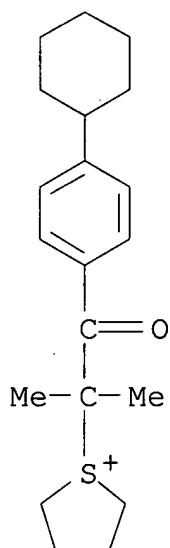
CMF C4 F9 O3 S

$-O_3S-(CF_2)_3-CF_3$

RN 848408-12-8 ZCA  
CN Thiophenium, 1-[2-(4-cyclohexylphenyl)-1,1-dimethyl-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4-octafluoro-1,4-butanedisulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 680200-02-6  
CMF C20 H29 O S



CM 2

CRN 109203-20-5  
CMF C4 F8 O6 S2

$^{-}O_3S-(CF_2)_4-SO_3^{-}$

IT **680200-03-7 848408-12-8**  
(pos.-working resist compn. contg. sulfonic acid generator)

L11 ANSWER 3 OF 65 ZCA COPYRIGHT 2005 ACS on STN  
142:363786 Positive photoresist compositions with high sensitivity and transparency to .ltoreq.200-nm laser lights and patterning therewith. Sasaki, Tomoya (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003091428 A2 20050407, 67 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-321020 20030912.  
AB The compns., showing high transparency to F2 excimer lasers (157



nm), comprise (A) resins having R1R2CC(L1X1R3)COX2 units (R1, R2 = H, halo, CN, alkyl; R1 and/or R2 = F, fluoroalkyl; L1 = alkylene; X1 = O, S, OCO, NRbCO; X2 = ORa, SRa, NRaRb; Ra = H, org. group; Rb = H, alkyl), which are decompd. by acids to increase soly. to alk. developers, and (B) compds. generating acids by actinic rays or radiation. Resist films formed from the compns. are exposed and developed to give fine patterns.

IT **470482-89-4**

(photoacid generators; pos. photoresist compns. with high sensitivity and transparency to F2 excimer lasers)

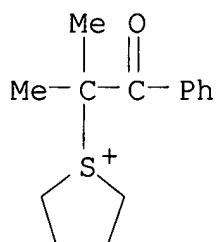
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

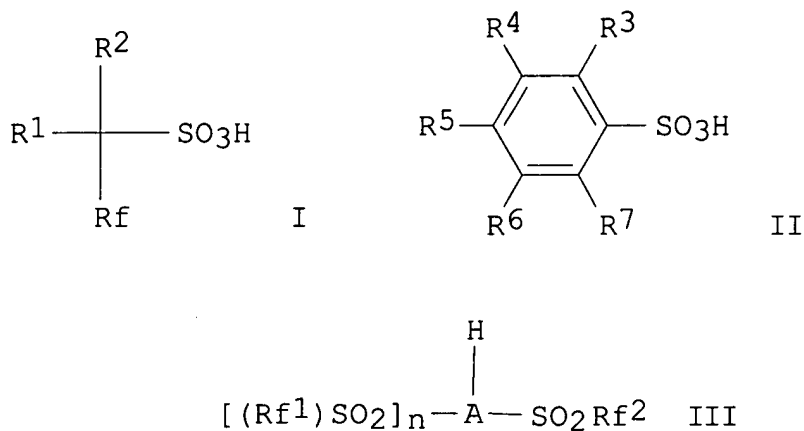
IT **470482-89-4**

(photoacid generators; pos. photoresist compns. with high sensitivity and transparency to F2 excimer lasers)

L11 ANSWER 4 OF 65 ZCA COPYRIGHT 2005 ACS on STN

142:363783 Photosensitive resin compositions with small line edge roughness and method for patterning therewith. Kodama, Kunihiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2005091427 A2 20050407, 63 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-321019 20030912.

GI



AB The compns. comprise (A1) compds. generating acids stronger than benzenesulfonic acid (BSA) by actinic rays or radiation, (A2) compds. generating acids equal to or weaker than BSA by actinic rays or radiation, and (B) resins with Tg 70-150.degree. having mono- or polycyclic hydrocarbon structures and acrylate ester-derived units and showing increase of soly. to alk. developers by acids. The compds. A1 may be  $\text{R}^1\text{R}^2\text{R}^f\text{CSO}_3\text{H}$  [I;  $\text{R}^1 = \text{F}$ , (cyclo)alkyl, aryl(alkyl);  $\text{R}^2 = \text{H}$ ,  $\text{F}$ , fluoro(cyclo)alkyl;  $\text{R}^f = \text{F}$ , fluoro(cyclo)alkyl], II [ $\text{R}^3\text{-R}^7 = \text{H}$ , (cyclo)alkyl, electron-withdrawing group; .gtoreq.1 of  $\text{R}^3\text{-R}^7 = \text{electron-withdrawing group}$ ], or  $(\text{R}^f1\text{SO}_2)_n\text{AH}(\text{O}_2\text{SR}^f2)$  [III;  $\text{A} = \text{C}$ ,  $\text{N}$ ;  $\text{R}^f1$ ,  $\text{R}^f2 = \text{fluoro(cyclo)alkyl}$ ; with the proviso that when  $\text{A} = \text{C}$ ,  $n = 2$ ; when  $\text{A} = \text{N}$ ,  $n = 1$ ]. The compds. A2 may be I [ $\text{R}^1 = \text{H}$ , (cyclo)alkyl, aryl(alkyl);  $\text{R}^2$ ,  $\text{R}^f = \text{H}$ , (cyclo)alkyl], II ( $\text{R}^3\text{-R}^7 = \text{H}$ , electron-withdrawing group), or III [ $\text{A} = \text{C}$ ,  $\text{N}$ ;  $\text{R}^f1$ ,  $\text{R}^f2 = \text{(cyclo)alkyl}$ ; with the proviso that when  $\text{A} = \text{C}$ ,  $n = 2$ ; when  $\text{A} = \text{N}$ ,  $n = 1$ ]. Resist films formed from the compns. are exposed and developed to give fine patterns.

IT **677351-28-9 680200-03-7 848209-20-1**

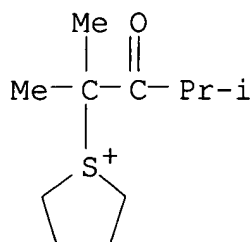
(photoacid generators; pos. photoresist compns. contg. strong and weak photoacid generators for precise patterning in small line edge roughness)

RN 677351-28-9 ZCA

CN Thiophenium, tetrahydro-1-(1,1,3-trimethyl-2-oxobutyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

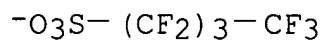
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CRN 677351-27-8  
CMF C11 H21 O S



CM 2

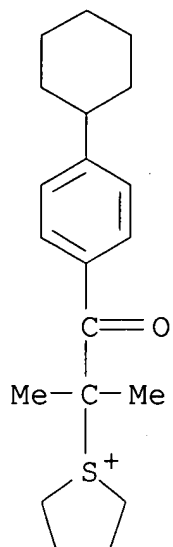
CRN 45187-15-3  
CMF C4 F9 O3 S



RN 680200-03-7 ZCA  
CN Thiophenium, 1-[2-(4-cyclohexylphenyl)-1,1-dimethyl-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

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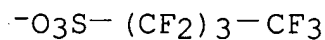
CRN 680200-02-6  
CMF C20 H29 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



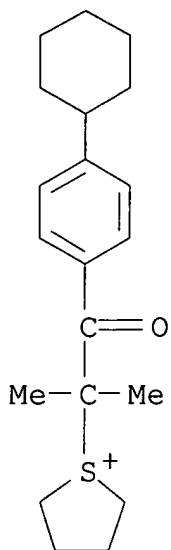
RN 848209-20-1 ZCA

CN Thiophenium, 1-[2-(4-cyclohexylphenyl)-1,1-dimethyl-2-oxoethyl]tetrahydro-, 1-dodecanesulfonate (9CI) (CA INDEX NAME)

CM 1

CRN 680200-02-6

CMF C20 H29 O S



CM 2

CRN 38480-64-7

CMF C12 H25 O3 S

 $^{-}\text{O}_3\text{S}-(\text{CH}_2)_{11}-\text{Me}$ IT **677351-28-9 680200-03-7 848209-20-1**

(photoacid generators; pos. photoresist compns. contg. strong and weak photoacid generators for precise patterning in small line edge roughness)

L11 ANSWER 5 OF 65 ZCA COPYRIGHT 2005 ACS on STN

142:363767 Stimuli-sensitive photoresists, acid or radical generators therefor, and patterning thereof. Kodama, Kunihiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2005084240 A2 20050331, 81 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-314219 20030905.

AB Compds. generating acids or radicals by external stimulation, represented by  $(\text{OH})_n\text{ArCOCR}_1\text{R}_2\text{S}^+\text{Y}_1\text{Y}_2\text{X}^-$  [Ar = aryl; R<sub>1</sub>, R<sub>2</sub> = H, (cyclo)alkyl, aryl; Y<sub>1</sub>, Y<sub>2</sub> = (cyclo)alkyl, aryl; n = 1-3; X<sup>-</sup> = nucleophilic anion], are claimed. Photoresists contg. the compds. and photolithog. patterning thereon are sep. claimed. The photoresists exhibit less dependency of pattern precision on post-exposure bake (PEB) temp.

IT **774221-73-7**

(photoacid generators; stimuli-sensitive photoacid generators for

photoresists with small PEB temp. dependency)

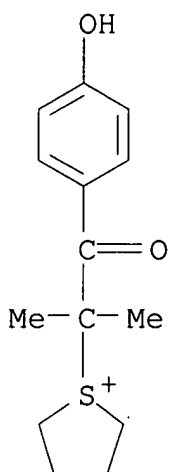
RN 774221-73-7 ZCA

CN Thiophenium, tetrahydro-1-[2-(4-hydroxyphenyl)-1,1-dimethyl-2-oxoethyl]-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 774221-72-6

CMF C14 H19 O2 S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$\text{-O}_3\text{S- (CF}_2\text{)}_3\text{-CF}_3$

IT **774221-73-7**

(photoacid generators; stimuli-sensitive photoacid generators for photoresists with small PEB temp. dependency)

L11 ANSWER 6 OF 65 ZCA COPYRIGHT 2005 ACS on STN

142:345165 Positive-working photoresist composition and method of pattern formation using the same. Sasaki, Tomoya (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2005084584 A2 20050331, 65 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-319396 20030911.

AB The title compn. contains a resin increasing the soly. in alkali developers by an acid and an actinic ray- or radiation-sensitive

acid generator, wherein the resin has repeating unit  
 $[-C(R_1)(R_2)-(R_3)\{(X)_n-L_2-O-L_1\}C-]$  ( $R_1, R_2 = H, \text{halo}, CN, \text{alkyl}$ ;  $R_3 = H, \text{cyano}, \text{alkyl}$ ;  $X = \text{alkyl solubilizable group}, \text{alkyl solubilizable group protected with an acid-sensitive group}$ ;  $L_1 = \text{single bond}, 2\text{-valent connecting group}$ ;  $L_2 = (n+1) \text{ valent connecting group}$ ;  $n = \text{integer } 1-4$ ). The compn. is suitable for 157 nm exposure light.

IT **470482-89-4**

(acid generator in pos.-working photoresist compn.)

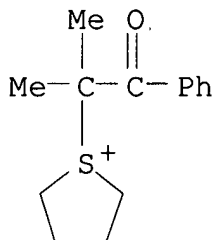
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$^-O_3S-(CF_2)_3-CF_3$

IT **470482-89-4**

(acid generator in pos.-working photoresist compn.)

L11 ANSWER 7 OF 65 ZCA COPYRIGHT 2005 ACS on STN

142:345147 Photosensitive composition and pattern forming method using the same. Kodama, Kunihiro; Wada, Kenji; Satoh, Kenichiro (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 1517179 A1 20050323, 146 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR. (English). CODEN: EPXXDW. APPLICATION: EP 2004-21460 20040909. PRIORITY: JP 2003-318276 20030910; JP 2003-327608 20030919; JP 2003-333503 20030925.

AB The present invention relates to a photosensitive compn. contg. a compd. capable of generating a specific acid having the plural no. of sulfonic groups by irradiation with an actinic ray or a radiation and a pattern forming method using the same.

IT **848408-12-8P 848408-23-1P**

(photoacid generator; photosensitive compn. for pattern forming method contg.)

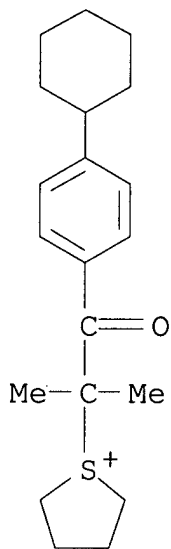
RN 848408-12-8 ZCA

CN Thiophenium, 1-[2-(4-cyclohexylphenyl)-1,1-dimethyl-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4-octafluoro-1,4-butanedisulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 680200-02-6

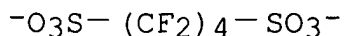
CMF C20 H29 O S



CM 2

CRN 109203-20-5

CMF C4 F8 O6 S2



RN 848408-23-1 ZCA

CN Thiophenium, tetrahydro-1-(1,1,3-trimethyl-2-oxobutyl)-, salt with 2,2'-[oxybis[(1,1,2,2-tetrafluoro-4,1-butanediyl)oxy]]bis[1,1,2,2-tetrafluoroethanesulfonic acid] (2:1) (9CI) (CA INDEX NAME)



CM 1

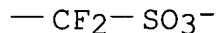
CRN 848408-22-0

CMF C12 H8 F16 O9 S2

PAGE 1-A



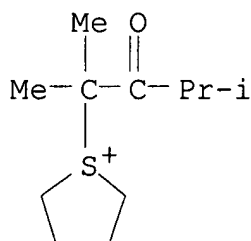
PAGE 1-B



CM 2

CRN 677351-27-8

CMF C11 H21 O S

IT **848408-12-8P 848408-23-1P**

(photoacid generator; photosensitive compn. for pattern forming method contg.)

L11 ANSWER 8 OF 65 ZCA COPYRIGHT 2005 ACS on STN

142:325935 Photoresist composition and pattern formation using the same. Kodama, Kunihiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2005077811 A2 20050324, 56 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-308700 20030901.

AB The title compn. contains a photoacid generator and a resin increasing the soly. in alkali developers by reacting with an acid, wherein the photoacid generator generates an arom. sulfonic acid or an aliph. sulfonic acid without a F-substituent at .alpha.-position and wherein the resin has hydrocarbon rings and acrylate based repeating units and 70-1750.degree. C glass transition temp. The

compn. provides improved characteristics on the post exposure delay, the temp. dependency and provides pattern of good profile without edge roughness.

IT **848209-20-1**

(photoacid generator in compn.)

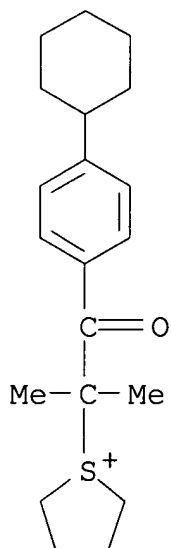
RN 848209-20-1 ZCA

CN Thiophenium, 1-[2-(4-cyclohexylphenyl)-1,1-dimethyl-2-oxoethyl]tetrahydro-, 1-dodecanesulfonate (9CI) (CA INDEX NAME)

CM 1

CRN 680200-02-6

CMF C20 H29 O S



CM 2

CRN 38480-64-7

CMF C12 H25 O3 S

$^{-}O_3S-(CH_2)_{11}-Me$

IT **848209-20-1**

(photoacid generator in compn.)

L11 ANSWER 9 OF 65 ZCA COPYRIGHT 2005 ACS on STN

142:306451 Storage-stable positive photoresists for F2 excimer laser lithography and patterning thereof. Sasaki, Tomoya (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2005070327 A2

20050317, 98 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-299022 20030822.

AB The photoresists contg. (A) fluororesins (preferable Markush given) having F-substituted main chain or sidechains and increasing alkali soly. by acid action and (B) photoacid generators and satisfying water content .ltoreq.0.3%, are pasted, exposed, and developed to form patterns with low line-edge roughness. The resin A may be replaced by a combination of alkali-sol. fluororesins and nonpolymeric dissoln. inhibitors.

IT **470482-89-4**

(photoacid generators; chem. amplified pos. resists contg. decompn.-resistant fluororesins for F2 excimer laser lithog.)

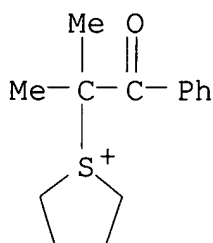
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

IT **470482-89-4**

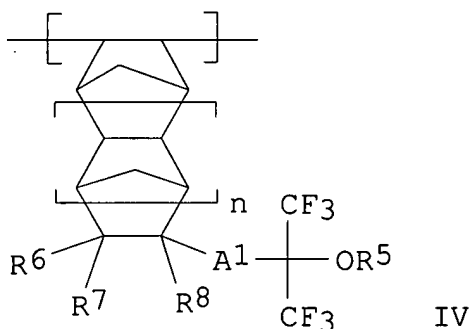
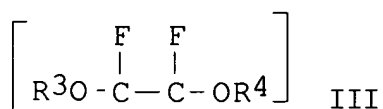
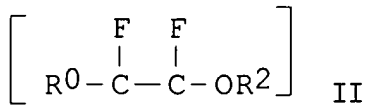
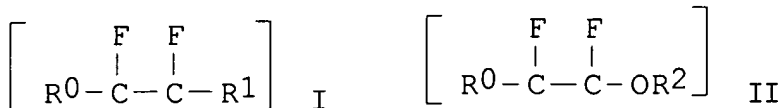
(photoacid generators; chem. amplified pos. resists contg. decompn.-resistant fluororesins for F2 excimer laser lithog.)

L11 ANSWER 10 OF 65 ZCA COPYRIGHT 2005 ACS on STN

142:186557 Positive photoresist compositions containing fluoropolymers for F2 excimer laser light lithography. Fujimori, Toru (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2005037777 A2

20050210, 63 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
2003-276092 20030717.

GI



AB The photoresist compns. having high sensitivity to F2 excimer laser light contain (A) fluoropolymers which contain F replacing polymer main chains, decomp. with acids and increase soly. in alkali developers, (B) photoacid generators, and (C) compds. contg. .gtoreq.3 OH or substituted OH. Preferably, the fluoropolymers A contain .gtoreq.1 of repeating units selected from  $\text{CFR}^0\text{CFR}^1$ ,  $\text{CFR}^0\text{CF}(\text{OR}^2)$ , and  $\text{CF}(\text{OR}^3)\text{CF}(\text{OR}^4)$  and .gtoreq.1 of repeating units selected from  $\text{CH}_2\text{CH}[\text{CH}_2\text{C}(\text{CF}_3)_2\text{OR}^5]$ , I,  $\text{CH}_2\text{CR}^9[\text{CO}_2\text{A}^2\text{C}(\text{CF}_3)_2\text{OR}^5]$ , II,  $\text{CHR}^{13}\text{CR}^{14}(\text{CO}_2\text{R}^{15})$ , and III [ $\text{R}^0, \text{R}^1 = \text{H}, \text{F}, \text{alkyl}, \text{cycloalkyl}, \text{aryl}$ ;  $\text{R}^2-\text{R}^4 = \text{alkyl}, \text{cycloalkyl}, \text{aryl}$ ;  $\text{R}^0$  and  $\text{R}^1$ ,  $\text{R}^0$  and  $\text{R}^2$ , and  $\text{R}^3$  and  $\text{R}^4$  may be bonded together and form ring;  $\text{R}^5 = \text{alkyl}, \text{cycloalkyl}, \text{acyl}, \text{alkoxycarbonyl}$ ;  $\text{R}^6-\text{R}^8 = \text{H}, \text{halo}, \text{alkyl}, \text{alkoxy}$ ;  $\text{R}^9, \text{R}^{10} = \text{H}, \text{halo}, \text{cyano}, \text{alkyl}$ ;  $\text{R}^{11}, \text{R}^{12} = \text{H}, \text{OH}, \text{halo}, \text{cyano}, \text{alkoxy}, \text{acyl}, \text{alkyl}, \text{cycloalkyl}, \text{alkenyl}, \text{aralkyl}, \text{aryl}$ ;  $\text{R}^{13}, \text{R}^{14} = \text{H}, \text{halo}, \text{cyano}, \text{alkyl}$ ;  $\text{R}^{15} = \text{CR}^{36}\text{R}^{37}\text{R}^{38}, \text{CR}^{36}\text{R}^{37}(\text{OR}^{39})$ , IV;  $\text{R}^{36}-\text{R}^{39} = \text{alkyl}, \text{cycloalkyl}, \text{alkenyl}, \text{aralkyl}, \text{aryl}$ ; .gtoreq.2 of  $\text{R}^{36}-\text{R}^{38}$ , or  $\text{R}^{36}$ ,  $\text{R}^{37}$ , and  $\text{R}^{39}$  may be bonded together and form ring;  $\text{R}^{40} = \text{alkyl}, \text{cycloalkyl}, \text{alkenyl}, \text{alkynyl}, \text{aralkyl}, \text{aryl}$ ; Z = atom. group which form single or polycyclic alicyclic group with C atom;  $\text{R}^{16}-\text{R}^{18} = \text{H}, \text{halo}, \text{cyano}, \text{alkyl}, \text{alkoxy}, \text{CO}_2\text{R}^{15}$ ;  $\text{A}^1, \text{A}^2 = \text{single bond}, \text{alkylene}, \text{alkenylene}, \text{cycloalkylene}, \text{divalent alicyclic group}, \text{divalent linking group formed by combination of these}, \text{O}_2\text{CR}^{22}, \text{CO}_2\text{R}^{23}$ ,

CONR24R25; R22, R23, R25 = single bond, alkylene, alkenylene, cycloalkylene, arylene which may contain ether, ester, amide, urethane, or ureido group; R24 = H, alkyl, cycloalkyl, aralkyl, aryl; n = 0, 1; m = 1, 2].

IT **470482-89-4 680200-03-7**

(pos. photoresist compns. contg. fluoropolymers, PAG, and saccharide derivs. for F2 excimer laser light lithog.)

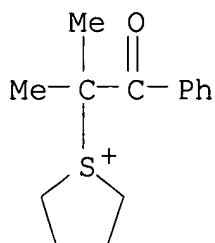
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$^{-}\text{O}_3\text{S}-(\text{CF}_2)_3-\text{CF}_3$

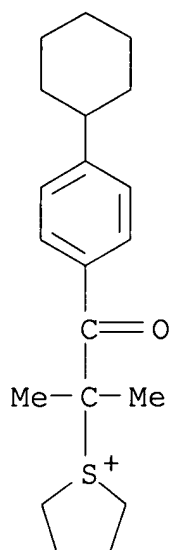
RN 680200-03-7 ZCA

CN Thiophenium, 1-[2-(4-cyclohexylphenyl)-1,1-dimethyl-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 680200-02-6

CMF C20 H29 O S



CM 2

CRN 45187-15-3  
CMF C4 F9 O3 S

 $\text{-O}_3\text{S- (CF}_2\text{)}_3\text{-CF}_3$ 
IT **470482-89-4 680200-03-7**

(pos. photoresist compns. contg. fluoropolymers, PAG, and  
saccharide derivs. for F2 excimer laser light lithog.)

L11 ANSWER 11 OF 65 ZCA COPYRIGHT 2005 ACS on STN

142:186548 Positive resist composition. Inabe, Haruki; Sasaki, Tomoya  
(Fuji Photo Film Co., Ltd., Japan). U.S. Pat. Appl. Publ. US  
2005026074 A1 20050203, 57 pp. (English). CODEN: USXXCO.  
APPLICATION: US 2004-897122 20040723. PRIORITY: JP 2003-280237  
20030725.

AB A pos. resist compn. comprises (A) a resin contg. at least one group  
that is decompd. by the action of an acid to generate an alkali-sol.  
group and (B) at least two compds. selected from (B1) a compd. that  
generates an aliph. or arom. sulfonic acid substituted with at least  
one fluorine atom, (B2) a compd. that generates an aliph. or arom.  
sulfonic acid that does not contain a fluorine atom, (B3) a compd.  
that generates an aliph. or arom. carboxylic acid substituted with  
at least one fluorine atom and (B4) a compd. that generates an  
aliph. or arom. carboxylic acid that does not contain a fluorine  
atom, as (B) a compd. that generates an acid upon irradiation of an

actinic ray or radiation, wherein the group that is decompd. by the action of an acid contained in the resin.

IT **470482-89-4**

(acid generator for pos. resist compn.)

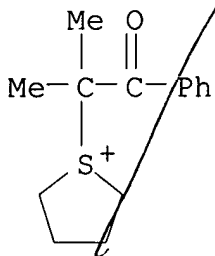
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$\text{-O}_3\text{S-(CF}_2\text{)}_3\text{-CF}_3$

IT **470482-89-4**

(acid generator for pos. resist compn.)

L11 ANSWER 12 OF 65 ZCA COPYRIGHT 2005 ACS on STN

142:186539 Positive photosensitive composition and method of forming resist pattern. Kodama, Kunihiko (Fuji Photo Film Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2005019690 A1 20050127, 48 pp. (English). CODEN: USXXCO. APPLICATION: US 2004-895824 20040722. PRIORITY: JP 2003-278995 20030724.

AB A pos. photosensitive compn. comprises: (A) 5 to 20 parts by wt. of the total amt. of at least one compd. that generates an acid upon irradiation with an actinic ray; and (B) 100 parts by wt. of the total amt. of at least one fluorine atom-contg. resin having a group that increases a soly. of the resin in an alk. developer by the action of an acid.

IT **470482-89-4 677351-28-9 680200-03-7**

(photoacid generator; pos. photosensitive compn. for forming resist pattern contg.)

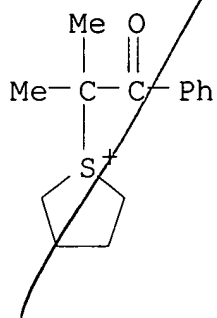
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$^{-}\text{O}_3\text{S}-(\text{CF}_2)_3-\text{CF}_3$

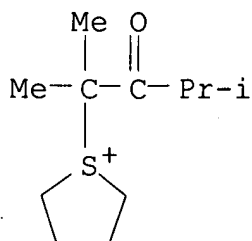
RN 677351-28-9 ZCA

CN Thiophenium, tetrahydro-1-(1,1,3-trimethyl-2-oxobutyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 677351-27-8

CMF C11 H21 O S

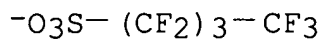




CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



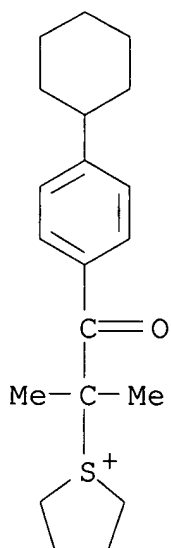
RN 680200-03-7 ZCA

CN Thiophenium, 1-[2-(4-cyclohexylphenyl)-1,1-dimethyl-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 680200-02-6

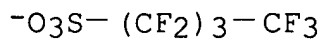
CMF C20 H29 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



IT 470482-89-4 677351-28-9 680200-03-7

(photoacid generator; pos. photosensitive compn. for forming resist pattern contg.)

L11 ANSWER 13 OF 65 ZCA COPYRIGHT 2005 ACS on STN

142:165564 Radiation-sensitive composition, compound and pattern formation method using the radiation-sensitive composition. Kodama, Kunihiro (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 1500977 A1 (2005) 126, 79 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR. (English). CODEN: EPXXDW. APPLICATION: EP 2004-17179 20040721. PRIORITY: JP 2003-277359 20030722; JP 2004-28944 20040205.

AB A stimulus-sensitive compn. comprises a compd.: Y-C(=O)-CR<sub>1</sub>R<sub>2</sub>-S+Y<sub>1</sub>Y<sub>2</sub>.cntdot. X- (Y =aryl, alkyl, cycloalkyl, alkenyl group, etc.; R<sub>1</sub>,<sub>2</sub> = H, alkyl, cycloalkyl, aryl, etc.; Y and R<sub>1</sub> may combine to form a ring; Y<sub>1</sub>,<sub>2</sub> = alkyl, cycloalkyl, aryl, etc.; X- = non-nucleophilic anion) that generates one of an acid and a radical by external stimulation.

IT **830323-75-6 830323-77-8**

(acid generator; radiation-sensitive compn., compd. and pattern formation method contg.)

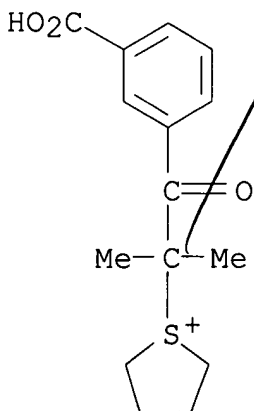
RN 830323-75-6 ZCA

CN Thiophenium, 1-[2-(3-carboxyphenyl)-1,1-dimethyl-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

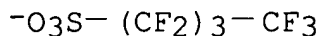
CRN 830323-74-5

CMF C15 H19 O3 S



CM 2

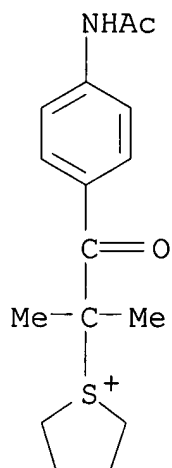
CRN 45187-15-3  
CMF C4 F9 O3 S



RN 830323-77-8 ZCA  
CN Thiophenium, 1-[2-[4-(acetylamino)phenyl]-1,1-dimethyl-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluorobutanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

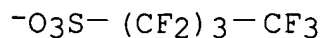
CM 1

CRN 830323-76-7  
CMF C16 H22 N O2 S



CM 2

CRN 45187-15-3  
CMF C4 F9 O3 S



IT **830323-75-6 830323-77-8**  
(acid generator; radiation-sensitive compn., compd. and pattern formation method contg.)

L11 ANSWER 14 OF 65 ZCA COPYRIGHT 2005 ACS on STN  
142:144113 Heat-sensitive lithographic plates showing good on-machine developability and scratch resistance to form high-quality images.

Yamazaki, Sumiaki; Kodama, Kunihiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2005014514 A2 20050120, 56 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-185213 20030627.

AB The plates have, on hydrophilic supports, heat-sensitive layers contg. (A) acid- or radically polymerizable compds., (B) photothermal converters, and (C) thermally acid/radical-generating compds. chosen from (c1)  $\text{ArCOCR}_6\text{R}_7\text{S}+\text{Y}_1\text{Y}_2\text{X}^-$  ( $\text{Ar}$  = aryl, heteroarom.;  $\text{R}_6$  = H, CN, alkyl, aryl;  $\text{R}_7$  = alkyl, aryl;  $\text{Y}_1, \text{Y}_2$  = alkyl, aryl, aralkyl, heteroarom.;  $\text{X}^-$  = non-nucleophilic anion), (c2)  $\text{R}_3(\text{R}_2\text{C}:\text{CR}_1)\text{nCOCR}_4\text{R}_5\text{S}+\text{Y}_3\text{Y}_4\text{X}^-$  [ $\text{R}_1-\text{R}_3$  = H, alkyl(oxy), alkenyl, aryl;  $\text{R}_4, \text{R}_5$  = H, CN, alkyl(oxy), aryl;  $\text{Y}_3, \text{Y}_4$  = alkyl, aryl, aralkyl, heteroarom.;  $n$  = 1-4;  $\text{X}^-$  = same as above], (c3)  $\text{R}_3\text{CO}(\text{R}_1\text{C}:\text{CR}_2)\text{nCR}_4\text{R}_5\text{S}+\text{Y}_3\text{Y}_4\text{X}^-$  ( $\text{R}_1-\text{R}_5, \text{Y}_3, \text{Y}_4, \text{X}^-$ ,  $n$  = same as above), and/or (c4)  $\text{WmZS}+\text{Y}_5\text{Y}_6\text{X}^-$  [ $\text{Y}_5, \text{Y}_6$  = (oxo)alkyl, aryl, (oxo)aralkyl, heterocyclic;  $\text{Z}$  = single bond, org. group;  $\text{W}$  =  $\text{CONRa}$ -contg. group,  $\text{SO}_2\text{NRa}$ -contg. group;  $\text{Ra}$  = H, alkyl;  $m$  = 1-3;  $\text{X}^-$  = same as above]. The layers are removable with printing inks and/or dampening water. Alternatively, the plates contain A-including microcapsules in heat-sensitive layers and c1, c2, c3, and/or c4 in the layers or in neighboring layers. The plates are useful for IR scanning exposure.

IT **470482-89-4P**

(acid/radical generators; heat-sensitive lithog. plates showing good on-machine developability and scratch resistance to form high-quality images)

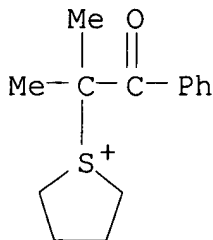
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluorobutanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

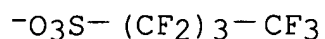
CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



IT **610301-09-2 676502-29-7**

(acid/radical generators; heat-sensitive lithog. plates showing good on-machine developability and scratch resistance to form high-quality images)

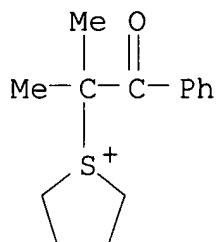
RN 610301-09-2 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 3,5-bis(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

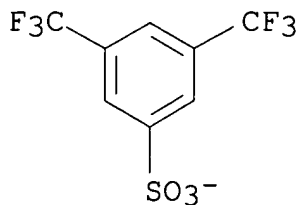
CMF C14 H19 O S



CM 2

CRN 213740-84-2

CMF C8 H3 F6 O3 S

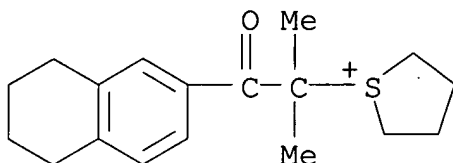


RN 676502-29-7 ZCA

CN Thiophenium, 1-[1,1-dimethyl-2-oxo-2-(5,6,7,8-tetrahydro-2-naphthalenyl)ethyl]tetrahydro-, salt with 3,5-bis(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

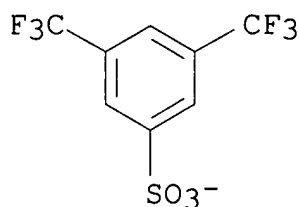
CM 1

CRN 676502-28-6  
CMF C18 H25 O S



CM 2

CRN 213740-84-2  
CMF C8 H3 F6 O3 S



IT **470482-89-4P**

(acid/radical generators; heat-sensitive lithog. plates showing good on-machine developability and scratch resistance to form high-quality images)

IT **610301-09-2 676502-29-7**

(acid/radical generators; heat-sensitive lithog. plates showing good on-machine developability and scratch resistance to form high-quality images)

L11 ANSWER 15 OF 65 ZCA COPYRIGHT 2005 ACS on STN

142:144071 Positive-working photoresist composition containing alkali-soluble fluorine-containing polymer. Kanda, Hiromi; Mizutani, Kazuyoshi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2005017729 A2 20050120, 41 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-182848 20030626.

AB Disclosed is the pos.-working photoresist compn. comprising (A) an alkali-sol. resin having a group represented by -C(CR1R2R3)(CR4R5R6)(OX) or -COOX (R1-6 = H, F, fluoroalkyl; and X = acid-decomposable group contg. .gtoreq.2 atoms selected from O, N, and S) and (B) a photoacid. The component (A) has .gtoreq.1 repeating unit formed from a vinyl ether compd. The compn. is esp. suited for a F2 excimer laser (157 nm), and gives sufficient optical transparency.

IT 470482-89-4

(photoacid; pos.-working photoresist compn. contg. alkali-sol.  
fluorine-contg. polymer)

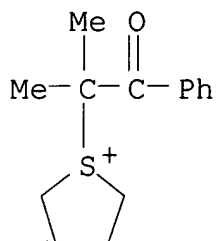
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt  
with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI)  
(CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

 $^{-}\text{O}_3\text{S}-(\text{CF}_2)_3-\text{CF}_3$ 

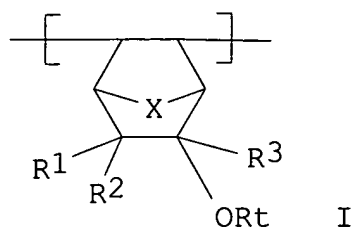
IT 470482-89-4

(photoacid; pos.-working photoresist compn. contg. alkali-sol.  
fluorine-contg. polymer)

L11 ANSWER 16 OF 65 ZCA COPYRIGHT 2005 ACS on STN

142:123179 Positive resist compositions for patterning using  
vacuum-ultraviolet ray. Kanda, Hiromi; Mizutani, Kazuyoshi (Fuji  
Photo Film Co., Ltd. Japan). Jpn. Kokai Tokkyo Koho JP 2005010392  
A2 20050113, 38 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
2003-173560 20030618.

GI



AB The compns. comprise (A) polymers having repeating units I (R1-R3 = F, fluoroalkyl; Rt = H, acid-decomposable group; X = C1-2 hydrocarbyl, heteroatom), whose soly. for alkali developers is increased by the action of acids, and (B) acid-generating compds. by irradi. of actinic light beam or radiation. The compns. are useful for manuf. of semiconductor devices. The compns. show high transmittance for 157-nm F2 excimer laser light and good compatibility with developers.

IT **470482-89-4**

(acid generators; pos. resist compns. with high transmittance to vacuum-UV ray for semiconductor fabrication)

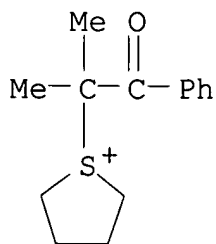
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S

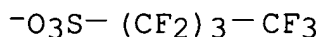


CM 2

CRN 45187-15-3

CMF C4 F9 O3 S





## IT 470482-89-4

(acid generators; pos. resist compns. with high transmittance to vacuum-UV ray for semiconductor fabrication)

L11 ANSWER 17 OF 65 ZCA COPYRIGHT 2005 ACS on STN

142:65327 Positive-working photoresist composition containing specific resin. Kanda, Hiromi; Mizutani, Kazuyoshi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004361578 A2 20041224, 39 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-158304 20030603.

AB The title compn. contains a resin, which increases the soly. in an alkali developer by an acid, and a photoacid generator, wherein the resin has repeating unit:  $[-\text{C}(\text{R}_1)(\text{R}_2)-\text{CH}(\text{O}-\text{R}_3)-]$ ; and  $[-\text{C}(\text{R}_4)(\text{R}_5)-\text{C}(\text{R}_7)(\text{O}-\text{R}_6)-]$  ( $\text{R}_1-2$ ,  $\text{R}_4-5$  = H, F, fluoroalkyl;  $\text{R}_3$  = alkyl,  $-\text{L}-\text{COOX}$ ,  $-\text{L}-\text{OX}$ ; L = connecting group; X = H- or acid-sensitive group;  $\text{R}_6$  = H- or acid-sensitive group;  $\text{R}_7$  = F, fluoroalkyl). The compn. is suitable for used with exposure light of .ltoreq.250 nm such as F2 excimer laser beam.

## IT 470482-89-4

(photoacid generator in pos.-working photoresist compn.)

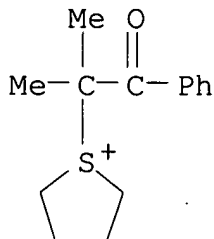
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

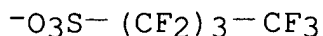
CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

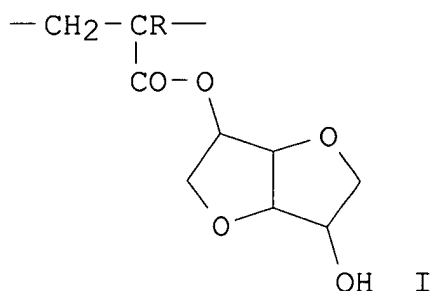
IT **470482-89-4**

(photoacid generator in pos.-working photoresist compn.)

L11 ANSWER 18 OF 65 ZCA COPYRIGHT 2005 ACS on STN

142:30016 Photo-acid generation type positive-working resist composition. Sato, Kenichiro; Kodama, Kunihiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004341061 A2 20041202, 62 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-134805 20030513.

GI



AB The disclosed resist compns. contain a polymer having structural repeating unit I (R = Me, H) which dissolves in an alk. developer upon reaction with an acid, and a sulfonium salt of formula  $\text{R}_1(\text{CR}_2:\text{CR}_3)_n\text{COCR}_4\text{R}_5\text{S}+\text{YY}_1\text{X}^-$  or  $\text{R}_1\text{CO}(\text{CR}_2:\text{CR}_3)_n\text{CR}_4\text{R}_5\text{S}+\text{YY}_1\text{X}^-$  ( $\text{R}_1-3 = \text{H}$ , alkyl, alkenyl, aryl, alkoxy;  $\text{R}_4, \text{R}_5 = \text{H}$ , cyano, alkyl, aryl, alkoxy;  $\text{Y}, \text{Y}_1 = \text{alkyl, aryl, aralkyl, heterocyclyl}$ ;  $n = 1-4$ ;  $\text{X}^- = \text{nonnucleophilic anion}$ ) which generates an acid upon irradiation with actinic radiation. The resist compns. show good sensitivity towards ArF excimer laser beam.

IT **690664-06-3**

(photoacid generation type pos.-working resist compn. contg.)

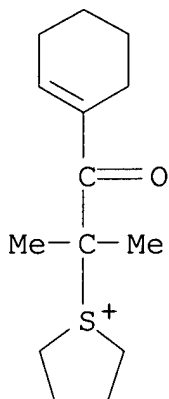
RN 690664-06-3 ZCA

CN Thiophenium, 1-[2-(1-cyclohexen-1-yl)-1,1-dimethyl-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluorobutanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 690664-05-2

CMF C14 H23 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

 $^{-}O_3S-(CF_2)_3-CF_3$ IT **690664-06-3**

(photoacid generation type pos.-working resist compn. contg.)

L11 ANSWER 19 OF 65 ZCA COPYRIGHT 2005 ACS on STN

142:29995 Positive-working UV-photoresist composition. Kanda, Hiromi; Mizutani, Kazuyoshi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004334135 A2 20041125, 47 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-156540 20030602. PRIORITY: JP 2003-66807 20030312.

AB Disclosed is the pos.-working UV-photoresist compn. comprising an alkali-developable resin having a repeating unit  $[R_1R_2C-CCN(OR_3)]$  ( $R_{1,2} = H, F, \text{fluoroalkyl}$ ;  $L = \text{single bond, divalent bond}$ ;  $R_3 = H, \text{polar group, group becoming acid sol. upon interaction with acid}$ ) and a photoacid. The compn. exhibited sufficient transparency for a 157-nm light source.

IT **470482-89-4**

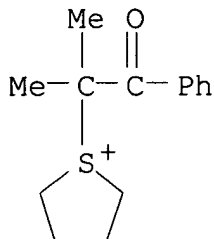
(photoacid; pos.-working UV-photoresist compn.)

RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefulfonic acid (1:1) (9CI) (CA INDEX NAME)

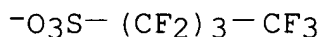
CM 1

CRN 470482-88-3  
CMF C14 H19 O S



CM 2

CRN 45187-15-3  
CMF C4 F9 O3 S

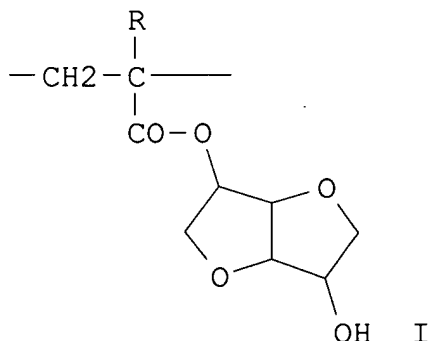


IT **470482-89-4**

(photoacid; pos.-working UV-photoresist compn.)

L11 ANSWER 20 OF 65 ZCA COPYRIGHT 2005 ACS on STN  
142:13678 Positive-working resist composition sensitive far-UV light.  
Sato, Kenichiro; Kodama, Kunihiro (Fuji Photo Film Co., Ltd.,  
Japan). Jpn. Kokai Tokkyo Koho JP 2004333925 A2 20041125, 61 pp.  
(Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-130385 20030508.

GI



AB Disclosed is the pos.-working resist compn. comprising (A) a resin which is able to increase its soly. in an alkali developer upon the interaction with an acid and has a repeating unit represented by I

(R = H, alkyl), (B) a photoacid represented by  $R1sR2sR3sS^+ X^-$  ( $R1s-3s$  = alkyl; and  $X^-$  = anion), and (C) a solvent.

IT **677351-28-9**

(photoacid; pos.-working resist compn. sensitive far-UV light)

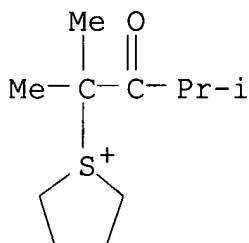
RN 677351-28-9 ZCA

CN Thiophenium, tetrahydro-1-(1,1,3-trimethyl-2-oxobutyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 677351-27-8

CMF C11 H21 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$^-O_3S-(CF_2)_3-CF_3$

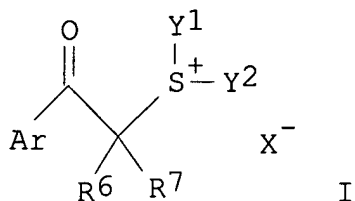
IT **677351-28-9**

(photoacid; pos.-working resist compn. sensitive far-UV light)

L11 ANSWER 21 OF 65 ZCA COPYRIGHT 2005 ACS on STN

141:417984 Presensitized lithographic plates for direct computer-to-plate platemaking. Kunita, Kazuto; Kodama, Kunihiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004325654 A2 20041118, 80 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-118585 20030423.

GI



AB The lithog. plate comprises, on a support, a photopolymerizable or heat-polymerizable imaging layer contg. a sulfonium salt such as I [Ar = aryl, heteroatom-bearing arom. group; R6 = H, cyano, alkyl, aryl; R7 = alkyl, aryl; Y1-2 = (ar)alkyl, aryl, heteroatom-bearing arom. group; at least one of Ar and Y1-2 may form a ring; Ar and R6 may form a ring; .gtoreq.1 selected from Ar and R6-7 may be connected with the same/another I; X- = non-nucleophilic anion]. Preferably, the imaging layer contains an alkali-sol. binder bearing a polymerizable group. The presence of the sulfonium salt improves sensitivity to light or heat, storage stability, and plate wear.

IT **610301-08-1 676502-26-4 676502-27-5**  
(light- or heat-presensitized lithog. plates for direct computer-to-plate platemaking)

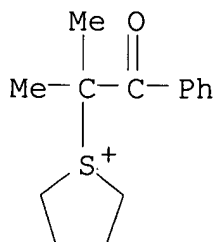
RN 610301-08-1 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-1-octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

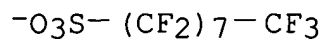
CMF C14 H19 O S



CM 2

CRN 45298-90-6

CMF C8 F17 O3 S



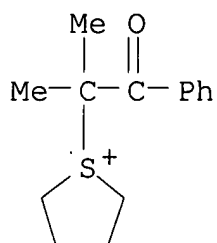
RN 676502-26-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt  
with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

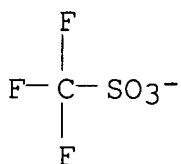
CMF C14 H19 O S



CM 2

CRN 37181-39-8

CMF C F3 O3 S



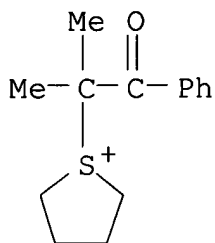
RN 676502-27-5 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt  
with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

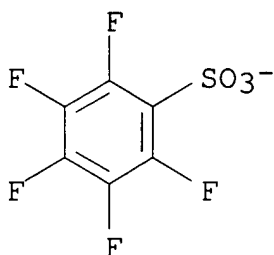
CMF C14 H19 O S



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S

IT **610301-08-1 676502-26-4 676502-27-5**

(light- or heat-presensitized lithog. plates for direct computer-to-plate platemaking)

L11 ANSWER 22 OF 65 ZCA COPYRIGHT 2005 ACS on STN

141:386380 Positive-working resist composition containing (meth)acrylic polymers and photoacids. Sato, Kenichiro; Yamanaka, Tsukasa; Nishiyama, Fumiyuki; Momota, Atsushi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004302199 A2 20041028, 80 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-95805 20030331.

AB Disclosed is the pos.-working resist compn. comprising (A) a resin which has acrylic repeating units and an alicyclic group and increases its soly. to a developer upon the interaction with an acid, (B) a resin free of an arom. group which has an acrylic repeating unit and a methacrylic repeating unit and increases its soly. to the developer upon the interaction with an acid, and (C) a photoacid. The compn. exhibited small PEB time dependence when it is used as a far-UV photoresist.

IT **470482-89-4**

(photoacid; pos.-working resist compn. contg. (meth)acrylic polymers and photoacid)

RN 470482-89-4 ZCA

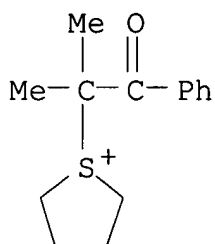


CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$-\text{O}_3\text{S}- (\text{CF}_2)_3-\text{CF}_3$

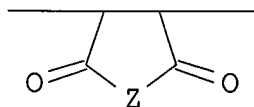
IT **470482-89-4**

(photoacid; pos.-working resist compn. contg. (meth)acrylic polymers and photoacid)

L11 ANSWER 23 OF 65 ZCA COPYRIGHT 2005 ACS on STN

141:372759 Positive-working resist composition with excellent post-exposure bake time dependence. Nakao, Hajime; Sato, Kenichiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004294870 A2 20041021, 90 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-88358 20030327.

GI



I

AB Disclosed is the pos.-working resist compn. comprising (A-1) a resin

which increase its soly. to an alkali developer upon an interaction with an acid, (A-2) a resin which has repeating units [HCR1a-CH(OR2a)] and I (R1a = H, hydrocarbon; R2a = hydrocarbon; Z = O, N(R3a); and R3a = H, OH, alkyl, etc.) and increases its soly. to the alkali developer upon an interaction with the acid, (B) a photoacid, and (C) a solvent.

IT **470482-89-4**

(photoacid; pos.-working resist compn. with excellent post-exposure bake time dependence)

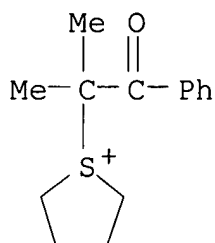
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$\text{-O}_3\text{S- (CF}_2\text{)}_3\text{-CF}_3$

IT **470482-89-4**

(photoacid; pos.-working resist compn. with excellent post-exposure bake time dependence)

L11 ANSWER 24 OF 65 ZCA COPYRIGHT 2005 ACS on STN

141:358073 Positive resist composition and pattern formation method.

Momota, Makoto; Nakao, Hajime (Fuji Photo Film Co., Ltd., Japan).

U.S. Pat. Appl. Publ. US 2004202954 A1 20041014, 58 pp. (English).

CODEN: USXXCO. APPLICATION: US 2004-802808 20040318. PRIORITY: JP

2003-88357 20030327; JP 2003-89020 20030327.

AB A pos. resist compn. comprises (A) a resin capable of increasing its

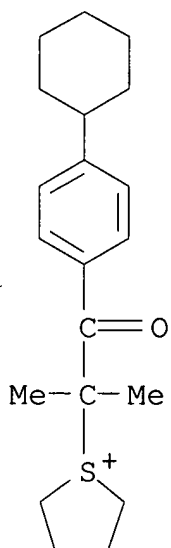
soly. in an alkali developer under action of an acid, wherein the resin contains a repeating unit originated in an acrylic acid ester deriv. in amt. of 50-100 mol% based on all repeating units and has a repeating unit having a specific lactone structure and a repeating unit having a monohydroxyadamantane or dihydroxyadamantane structure, (B) a compd. of generating an acid upon irradiation with actinic rays or radiation, and (C) an org. solvent. The object of the present invention is to provide a pos. resist compn. reduced in the generation of cracking at the thermal flow process and excellent in the dry etching resistance, and a pattern formation method using the compn.

IT **680200-02-6**

(pos. resist compn. and pattern formation method)

RN 680200-02-6 ZCA

CN Thiophenium, 1-[2-(4-cyclohexylphenyl)-1,1-dimethyl-2-oxoethyl]tetrahydro- (9CI) (CA INDEX NAME)



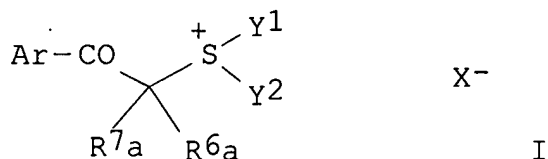
IT **680200-02-6**

(pos. resist compn. and pattern formation method)

L11 ANSWER 25 OF 65 ZCA COPYRIGHT 2005 ACS on STN

141:358070 Positive-working chemically amplified photoresist composition. Nishiyama, Fumiyuki; Fujimori, Toru; Kodama, Kunihiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004287195 A2 20041014, 70 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-80679 20030324.

GI



AB The title compn. contains acid-sensitive alkali-solubilizable resins and a photoacid generator, wherein the resins include a resin having unit  $-\text{O}-\text{C}(\text{H})(\text{CH}_3)-\text{O}-[-\text{C}(\text{R}_1)(\text{R}_2)]_m-\text{Z}_1$  ( $\text{R}_1-\text{R}_2 = \text{H}$ , alkyl;  $m = \text{integer } 1-20$ ;  $\text{Z}_1 = \text{no definition provided}$ ), and/or a resin having unit  $-\text{O}-\text{C}(\text{H})(\text{CH}_3)-\text{O}-\text{R}_4$  ( $\text{R}_4 = \text{alkyl}$ ), and a resin having unit  $-\text{O}-\text{C}(\text{R}_5)(\text{R}_6)-\text{O}-\text{X}-[-\text{Y}]_l-\text{Z}_2$  ( $\text{R}_5-\text{R}_6 = \text{H}$ , alkyl;  $\text{X} = \text{alkylene}$ ;  $\text{Y} = 2\text{-valent connecting group}$ ;  $\text{Z}_2 = \text{heterocyclic ring}$ ;  $l = 0, 1$ ) and wherein the photoacid generator has general structure I ( $\text{Ar} = \text{aryl}$ , arom. group with hetero atom;  $\text{R}^6\text{a} = \text{H}$ , CN, alkyl, aryl;  $\text{R}^7\text{a} = \text{alkyl}$ , aryl;  $\text{Y}^1-\text{Y}^2 = \text{alkyl}$ , aryl, aralkyl, arom. group with hetero atom;  $\text{X}^- = \text{non-nucleophilic anion}$ ). The compn. provides pattern of precise line width on a high reflective rough-surface substrate.

IT **470482-89-4 610301-08-1 610301-09-2**  
**610301-40-1 610301-42-3 610301-44-5**  
**676502-26-4 676502-27-5 676502-29-7**  
**680200-03-7 704912-07-2 774221-61-3**  
**774221-66-8 774221-67-9 774221-68-0**  
**774221-71-5 774221-73-7 774221-74-8**  
**774221-76-0**

(pos.-working photoresist)

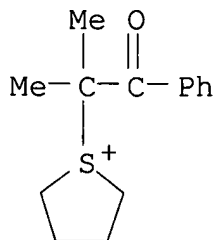
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluorobutanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

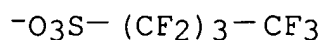
CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



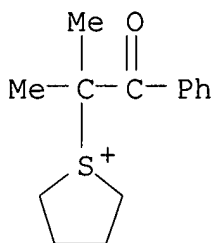
RN 610301-08-1 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt  
with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-  
octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

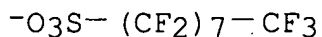
CMF C14 H19 O S



CM 2

CRN 45298-90-6

CMF C8 F17 O3 S



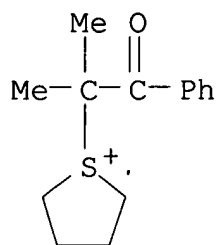
RN 610301-09-2 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt  
with 3,5-bis(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA  
INDEX NAME)

CM 1

CRN 470482-88-3

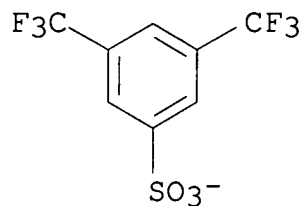
CMF C14 H19 O S



CM 2

CRN 213740-84-2

CMF C8 H3 F6 O3 S



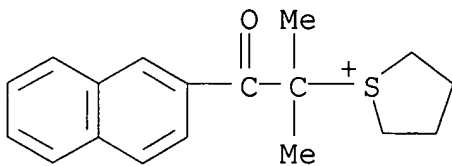
RN 610301-40-1 ZCA

CN Thiophenium, 1-[1,1-dimethyl-2-(2-naphthalenyl)-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 610301-39-8

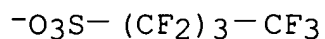
CMF C18 H21 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



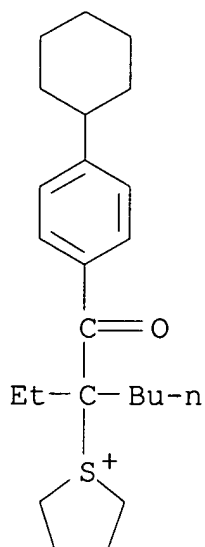
RN 610301-42-3 ZCA

CN Thiophenium, 1-[1-(4-cyclohexylbenzoyl)-1-ethylpentyl]tetrahydro-,  
salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1)  
(9CI) (CA INDEX NAME)

CM 1

CRN 610301-41-2

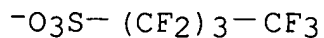
CMF C24 H37 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

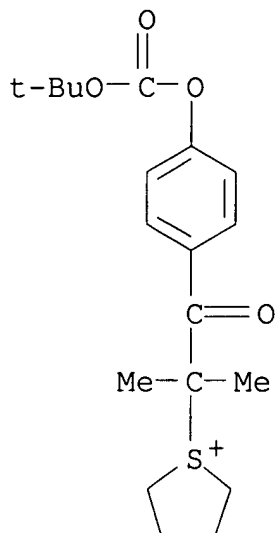


RN 610301-44-5 ZCA

CN Thiophenium, 1-[2-[4-[(1,1-dimethylethoxy)carbonyloxy]phenyl]-1,1-dimethyl-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

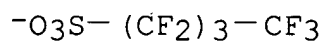
CM 1

CRN 610301-43-4  
CMF C19 H27 O4 S



CM 2

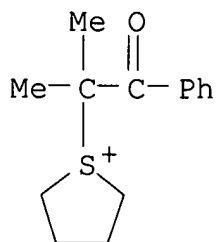
CRN 45187-15-3  
CMF C4 F9 O3 S



RN 676502-26-4 ZCA  
CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt  
with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3  
CMF C14 H19 O S

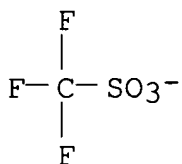




CM 2

CRN 37181-39-8

CMF C F3 O3 S



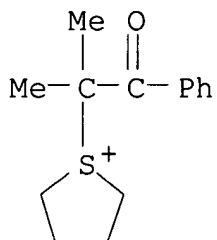
RN 676502-27-5 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

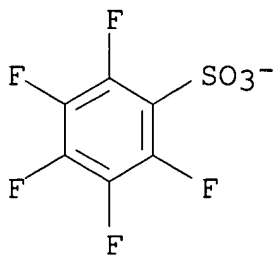
CMF C14 H19 O S



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



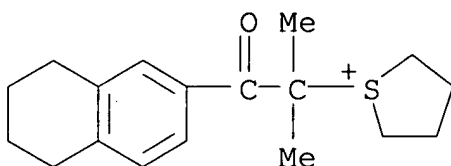
RN 676502-29-7 ZCA

CN Thiophenium, 1-[1,1-dimethyl-2-oxo-2-(5,6,7,8-tetrahydro-2-naphthalenyl)ethyl]tetrahydro-, salt with 3,5-bis(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 676502-28-6

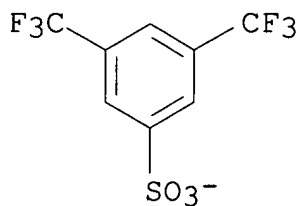
CMF C18 H25 O S



CM 2

CRN 213740-84-2

CMF C8 H3 F6 O3 S



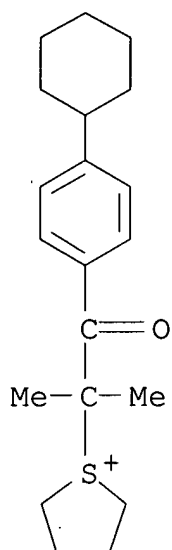
RN 680200-03-7 ZCA

CN Thiophenium, 1-[2-(4-cyclohexylphenyl)-1,1-dimethyl-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

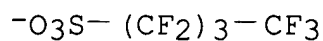
CRN 680200-02-6

CMF C20 H29 O S



CM 2

CRN 45187-15-3  
CMF C4 F9 O3 S

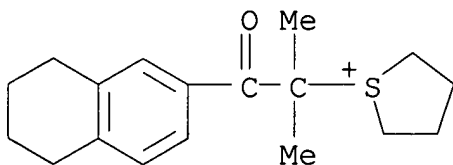


RN 704912-07-2 ZCA

CN Thiophenium, 1-[1,1-dimethyl-2-oxo-2-(5,6,7,8-tetrahydro-2-naphthalenyl)ethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

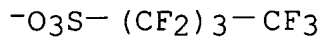
CM 1

CRN 676502-28-6  
CMF C18 H25 O S



CM 2

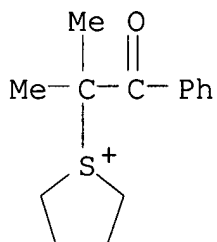
CRN 45187-15-3  
CMF C4 F9 O3 S



RN 774221-61-3 ZCA  
CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt  
with 1,1,2,2-tetrafluoro-2-(pentafluoroethoxy)ethanesulfonic acid  
(1:1) (9CI) (CA INDEX NAME)

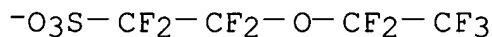
CM 1

CRN 470482-88-3  
CMF C14 H19 O S



CM 2

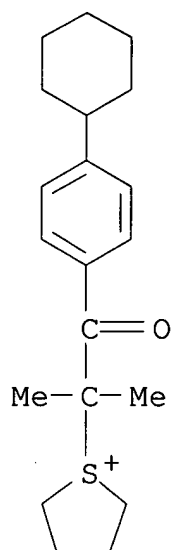
CRN 220689-13-4  
CMF C4 F9 O4 S



RN 774221-66-8 ZCA  
CN Thiophenium, 1-[2-(4-cyclohexylphenyl)-1,1-dimethyl-2-oxoethyl]tetrahydro-, salt with trifluoromethanesulfonic acid (1:1)  
(9CI) (CA INDEX NAME)

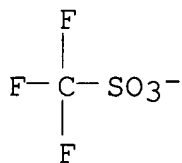
CM 1

CRN 680200-02-6  
CMF C20 H29 O S



CM 2

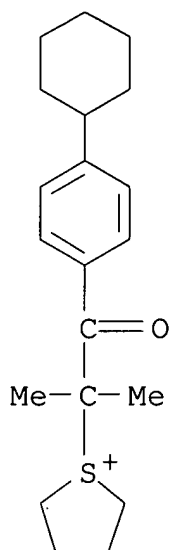
CRN 37181-39-8  
CMF C F3 O3 S



RN 774221-67-9 ZCA  
CN Thiophenium, 1-[2-(4-cyclohexylphenyl)-1,1-dimethyl-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-1-octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 680200-02-6  
CMF C20 H29 O S



CM 2

CRN 45298-90-6

CMF C8 F17 O3 S

-O<sub>3</sub>S- (CF<sub>2</sub>)<sub>7</sub>-CF<sub>3</sub>

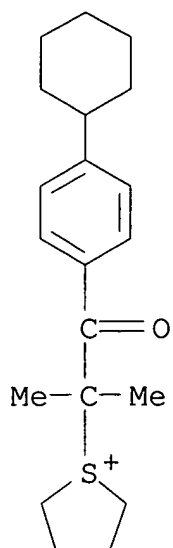
RN 774221-68-0 ZCA

CN Thiophenium, 1-[2-(4-cyclohexylphenyl)-1,1-dimethyl-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-N-[(nonafluorobutyl)sulfonyl]-1-butanesulfonamide (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 680200-02-6

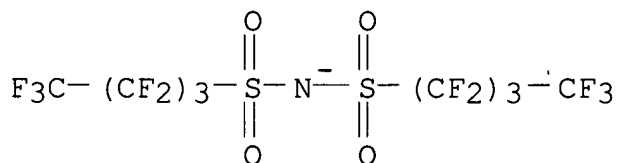
CMF C20 H29 O S



CM 2

CRN 191101-38-9

CMF C8 F18 N O4 S2



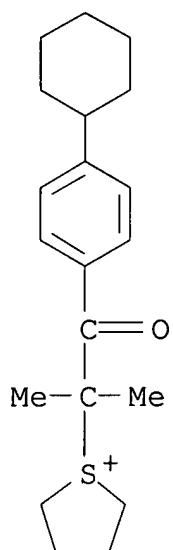
RN 774221-71-5 ZCA

CN Thiophenium, 1-[2-(4-cyclohexylphenyl)-1,1-dimethyl-2-oxoethyl]tetrahydro-, salt with 3,5-bis(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 680200-02-6

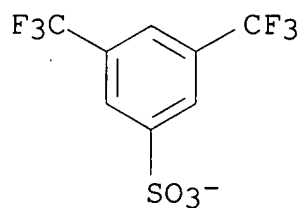
CMF C20 H29 O S



CM 2

CRN 213740-84-2

CMF C8 H3 F6 O3 S



RN 774221-73-7 ZCA

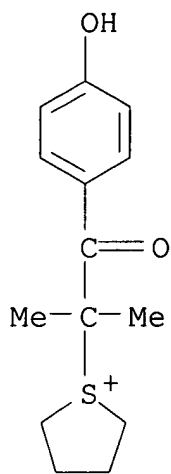
CN Thiophenium, tetrahydro-1-[2-(4-hydroxyphenyl)-1,1-dimethyl-2-oxoethyl]-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 774221-72-6

CMF C14 H19 O2 S

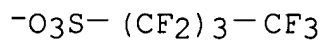




CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



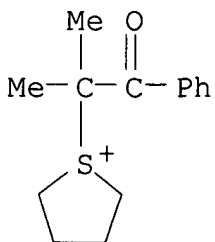
RN 774221-74-8 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt  
with 2,4,6-tris(1-methylethyl)benzenesulfonic acid (1:1) (9CI) (CA  
INDEX NAME)

CM 1

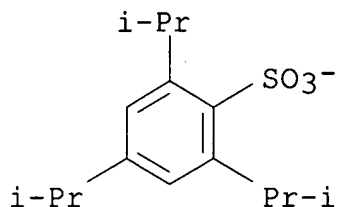
CRN 470482-88-3

CMF C14 H19 O S



CM 2

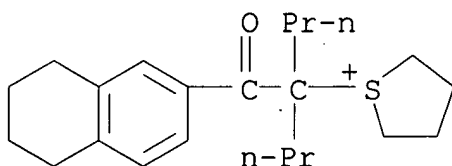
CRN 46950-23-6  
CMF C15 H23 O3 S



RN 774221-76-0 ZCA  
CN Thiophenium, tetrahydro-1-[1-propyl-1-[(5,6,7,8-tetrahydro-2-naphthalenyl)carbonyl]butyl]-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 774221-75-9  
CMF C22 H33 O S



CM 2

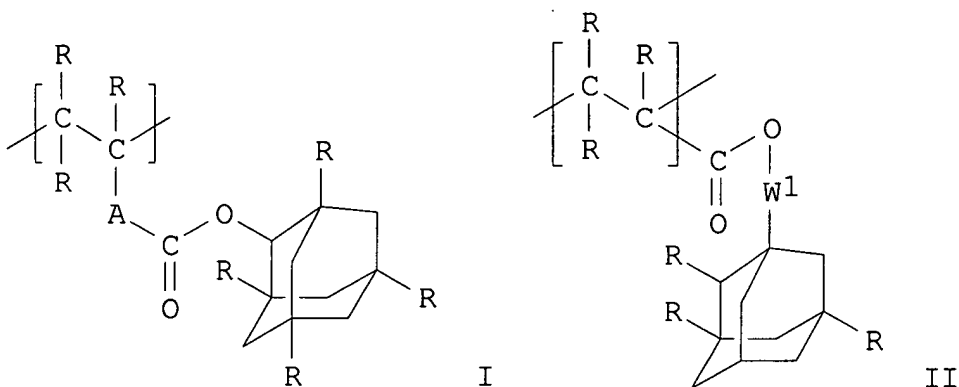
CRN 45298-90-6  
CMF C8 F17 O3 S

<sup>-</sup>O<sub>3</sub>S<sup>-</sup> (CF<sub>2</sub>)<sub>7</sub>CF<sub>3</sub>

IT 470482-89-4 610301-08-1 610301-09-2  
610301-40-1 610301-42-3 610301-44-5  
676502-26-4 676502-27-5 676502-29-7  
680200-03-7 704912-07-2 774221-61-3  
774221-66-8 774221-67-9 774221-68-0  
774221-71-5 774221-73-7 774221-74-8  
774221-76-0  
(pos.-working photoresist)

141:340392 Positive resist composition and method of pattern formation.  
 Yamanaka, Tsukasa; Sato, Kenichiro (Fuji Photo Film Co., Ltd.,  
 Japan). U.S. Pat. Appl. Publ. US 2004197707 A1 20041007, 52 pp.  
 (English). CODEN: USXXCO. APPLICATION: US 2004-801723 20040317.  
 PRIORITY: JP 2003-95804 20030331.

GI



AB A pos. resist compn. comprises: at least two resins which differ in glass transition temp. by at least 5.degree. C and have structural formulas I and II (R = H, OH, halogen, Cl-4-alkyl, provided that R's are the same or different; A = single bond, alkylene, ether, thioether, carbonyl, ester, amide, sulfonamide, urethane, urea; W1 = alkylene group.); and a compd. which generates an acid upon irradiation with actinic rays or radiation, wherein each of the two resins comprises at least either of a repeating unit derived from an acrylic acid deriv. monomer and a repeating unit derived from a methacrylic acid deriv. monomer and further comprises an alicyclic structure and at least one group that increases a soly. of the resin in alk. developer by the action of an acid. The object of the invention is to provide a resist compn. which is suitable for exposure to light having a wavelength of 200 nm or shorter, in particular, exposure with an ArF excimer laser, shows sufficient resolu. even in ordinary pattern formation, and has such thermal flow suitability that a reduced pattern size can be obtained only through flow bake at an appropriate temp., and it is easy to regulate the flow amt. while attaining an appropriate flow rate.

IT **470482-89-4 680200-03-7**

(pos. resist compn. and method of pattern formation)

RN 470482-89-4 ZCA

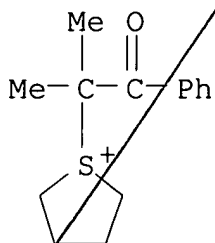
CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI)

(CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

 $^{-}\text{O}_3\text{S}^{-}(\text{CF}_2)_3\text{CF}_3$ 

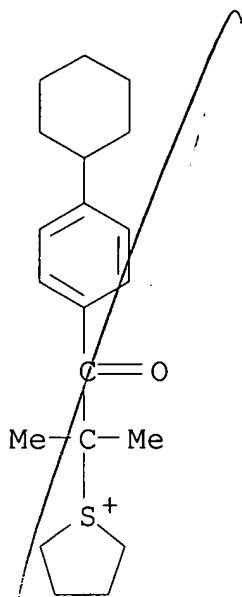
RN 680200-03-7 ZCA

CN Thiophenium, 1-[2-(4-cyclohexylphenyl)-1,1-dimethyl-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 680200-02-6

CMF C20 H29 O S



CM 2

CRN 45187-15-3  
CMF C4 F9 O3 S

 $^{-}O_3S-(CF_2)_3-CF_3$ 

IT **470482-89-4 680200-03-7**  
(pos. resist compn. and method of pattern formation)

L11 ANSWER 27 OF 65 ZCA COPYRIGHT 2005 ACS on STN  
141:322579 Positive resist composition. Nakao, Hajime; Momota, Atsushi  
(Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP  
2004279804 A2 20041007, 66 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 2003-72034 20030317.

AB Title compn. is suitable for producing fine patterns and comprises  
(A) a resin component having increased soly. in alkali soln. in the  
presence of an acid and comprising polymers contg. structural units  
derived from at least acrylic acid esters, lactone-contg. monomers,  
and hydroxy-substituted adamantyl-contg. monomers, (B) photo- or  
radiation-sensitive acid generators including at least one selected  
from triarylsulfonium salts and phenacylsulfonium salts, and (C)  
org. solvents including a cyclic ketone and others selected from  
propylene glycol monoalkyl ether carboxylates, alkyl lactates, and  
un-branched ketones.

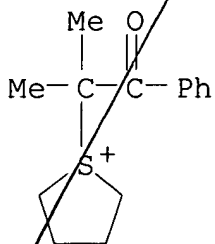
IT **470482-89-4**  
(pos. resist compn. suitable for producing fine patterns)

RN 470482-89-4 ZCA  
 CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt  
 with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI)  
 (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$-\text{O}_3\text{S}-(\text{CF}_2)_3-\text{CF}_3$

IT **470482-89-4**  
 (pos. resist compn. suitable for producing fine patterns)

L11 ANSWER 28 OF 65 ZCA COPYRIGHT 2005 ACS on STN  
 141:304282 Stimulus sensitive compound such as light-sensitive acid or  
 radical precursors and stimulus sensitive composition containing the  
 same. Kodama, Kunihiro; Takahashi, Hyou (Fuji Photo Film Co., Ltd.,  
 Japan). U.S. Pat. Appl. Publ. US 2004185378 A1 20040923, 56 pp.  
 (English). CODEN: USXXCO. APPLICATION: US 2004-799864 20040315.  
 PRIORITY: JP 2003-68447 20030313.

AB The invention relates to a stimulus sensitive compn. contg. a compd.  
 capable of generating an acid or a radical on receipt of an external  
 stimulus such as light-irradn., the compd. being represented as  
 $\text{Y}-\text{CO}-\text{C}(\text{R}_1)(\text{R}_2)-\text{S}^+(\text{Y}_1)(\text{Y}_2)$  (Y = group having a bridged cyclic  
 structure; R1-2 = H, alkyl, aryl; Y1-2 = alkyl, aryl; X - =  
 non-nucleophilic anion). The compn. is cured with acids or radicals  
 and suitable for use in the fabrication of semiconductor devices,  
 printed circuit boards for liq. crystal displays, thermal heads,  
 lithog. printing plates, etc.

IT **761458-79-1P**

(stimulus sensitive compd.)

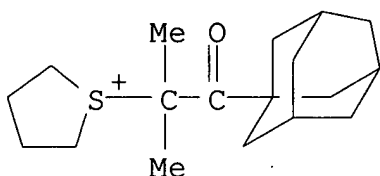
RN 761458-79-1 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-ylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,5,5,5-undecafluoro-1-pentanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 761458-78-0

CMF C18 H29 O S



CM 2

CRN 175905-36-9

CMF C5 F11 O3 S

F<sub>3</sub>C<sup>-</sup> (CF<sub>2</sub>)<sub>4</sub>-SO<sub>3</sub><sup>-</sup>IT **761458-79-1P**

(stimulus sensitive compd.)

L11 ANSWER 29 OF 65 ZCA COPYRIGHT 2005 ACS on STN

141:251447 Positive-working resist composition containing cyclic ether compound. Fujimori, Toru (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004251975 A2 20040909, 79 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-39827 20030218.

AB The compn. contains (A) a compd. generating an acid by irradiation of actinic ray, (B) a resin insol. in alk. developer and becoming sol. by the action of the acid, and (C) a compd. bearing .gtoreq.1 cyclic ether and .gtoreq.1 alicyclic groups. The compn. shows small line edge roughness and less scum generation.

IT **470482-89-4**

(photoacid generator; pos.-working resist compn. contg. cyclic ether)

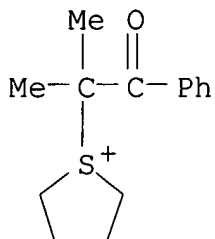
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

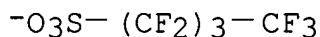
CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

IT **470482-89-4**

(photoacid generator; pos.-working resist compn. contg. cyclic ether)

L11 ANSWER 30 OF 65 ZCA COPYRIGHT 2005 ACS on STN

141:233205 Positive resist composition with wide exposure latitude.

Fujimori, Toru (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai

Tokkyo Koho JP 2004246276 A2/20040902, 76 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-38527 20030217.

AB Title compn. comprises (A) a radiation-active acid generator, (B) a resin component which is insol. or poorly sol. in alkali developing liq., but becomes sol. in the presence of an acid, and (C) a compd. reactive to acid group and forming chem. bond in the presence of an acid.

IT **470482-89-4**

(pos. resist compn. with wide exposure latitude)

RN 470482-89-4 ZCA

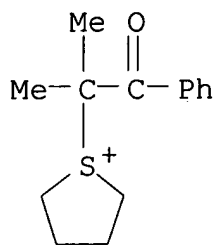
CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluorobutanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S





CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

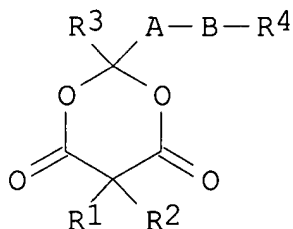
-O<sub>3</sub>S- (CF<sub>2</sub>)<sub>3</sub>-CF<sub>3</sub>IT **470482-89-4**

(pos. resist compn. with wide exposure latitude)

L11 ANSWER 31 OF 65 ZCA COPYRIGHT 2005 ACS on STN

141:215640 Cyclic ethers and positive resist compositions. Fujimori, Toru (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004238304 A2 20040826, 76 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-27161 20030204.

GI



I

AB The cyclic ethers comprise I (R<sub>1</sub>, R<sub>2</sub> = H, alkyl, cycloalkyl, aryl, aralkyl; R<sub>1</sub> and R<sub>2</sub> may form ring or substituent bonded to ring via double bond; R<sub>3</sub>, R<sub>4</sub> = alkyl, cycloalkyl, aryl, aralkyl; A = alkylene; B = heteroatom). The compns. comprise acid-generating agents by irradiation of actinic ray or radiation, alkali developer-insol. polymers showing solubility for alkali developers by the action of acids, and I. The compns. are useful for manufacture of semiconductor devices and circuit boards and photofabrication. The

comps. show good roundness of contact holes and rectangular profiles.

IT **470482-89-4**

(acid generators; cyclic ethers for pos. resists with good roundness of contact holes and rectangular profiles)

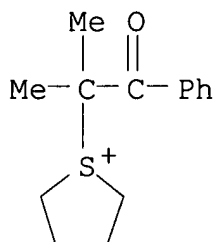
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$\text{-O}_3\text{S- (CF}_2\text{)}_3\text{-CF}_3$

IT **470482-89-4**

(acid generators; cyclic ethers for pos. resists with good roundness of contact holes and rectangular profiles)

L11 ANSWER 32 OF 65 ZCA COPYRIGHT 2005 ACS on STN

141:215619 Photoresist compositions containing light- and/or heat-sensitive radical- or acid-generator. Kodama, Kunihiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004233661 A2 20040819, 73 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-22318 20030130.

AB The title compn. contains a light- and/or heat-sensitive radical- or acid-generator, wherein the radical generator is a salt and has F-groups and carbonyl groups. The compn. provides pattern of high resolu. and good profiles and is suitable for use in manufg. semiconductor device fabrication, thermal head, lithog. plate, etc.

IT 470482-89-4 741695-21-6

(light- and/or heat-sensitive radical- or acid-generator in photoresist compns.)

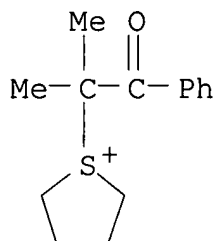
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

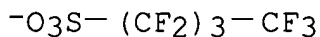
CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



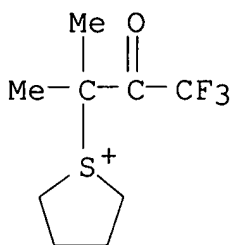
RN 741695-21-6 ZCA

CN Thiophenium, tetrahydro-1-(3,3,3-trifluoro-1,1-dimethyl-2-oxopropyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 741695-20-5

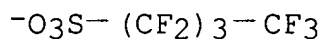
CMF C9 H14 F3 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

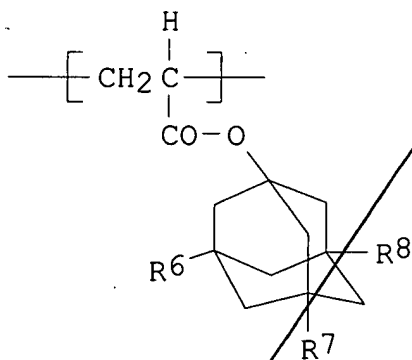
IT **470482-89-4 741695-21-6**

(light- and/or heat-sensitive radical- or acid-generator in photoresist comps.)

L11 ANSWER 33 OF 65 ZCA COPYRIGHT 2005 ACS on STN

141:197371 Chemically amplified positive-working photoresist compositions for far-UV lithography. Sato, Kenichiro; Yamanaka, Tsukasa; Momota, Atsushi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004240044 A2 20040826, 73 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-27202 20030204.

GI



I

AB The photoresist compns. contain polymers (A) whose all repeating units are acrylate esters including alicyclic lactone acrylate ester repeating unit and adamantane acrylate repeating unit I (R6-8 = H, OH, alkyl; at least one of R6-8 is OH) and increase soly. rate in alk. developers by acid action, photoacid generators (B), and solvents (C). The compns. have less dependence on post-exposure-baking temp., and provide good-profile patterns with good surface smoothness.

IT **470482-89-4**

(photoacid generators; in far-UV pos. photoresists contg. adamantane acrylate-alicyclic lactone copolymers and photoacid generators)

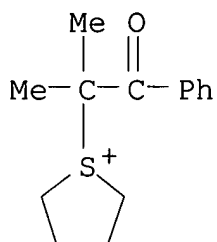
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$\text{-O}_3\text{S- (CF}_2\text{)}_3\text{-CF}_3$

IT **470482-89-4**

(photoacid generators; in far-UV pos. photoresists contg. adamantane acrylate-alicyclic lactone copolymers and photoacid generators)

L11 ANSWER 34 OF 65 ZCA COPYRIGHT 2005 ACS on STN

141:181968 Chemically amplified positive resist compositions with improved line edge roughness and suppressed scum generation.

Fujimori, Toru (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004219571 A2 20040805, 93 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-4801 20030110.

AB The pos. resist compns. contain (A) compds. generating acids by irradiation of actinic light or irradiation, (B) resins which are insoluble or slightly soluble in alkali developers and become soluble to the alkali developers with the assistance of acids, and (C) basic compounds bearing groups which generate polar groups with the assistance of acids.

IT **470482-89-4**

(photoacid generator; chem. amplified pos. resist compounds with improved line edge roughness and suppressed scum generation)

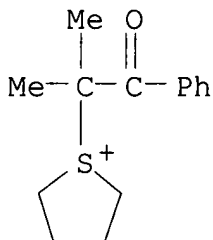
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluorobutanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$\text{-O}_3\text{S- (CF}_2\text{)}_3\text{-CF}_3$

IT **470482-89-4**

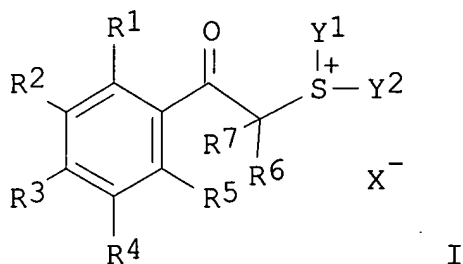
(photoacid generator; chem. amplified pos. resist compounds with improved line edge roughness and suppressed scum generation)

L11 ANSWER 35 OF 65 ZCA COPYRIGHT 2005 ACS on STN

141:131279 Negative-working photoresist composition containing specific sulfonic acid-generator. Yasunami, Shoichiro; Shirakawa, Hiroshi; Takahashi, Omote (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai

Tokkyo Koho JP 2004198724 A2 20040715, 66 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-367008 20021218.

GI



AB The title compn. contains an acid-sensitive alkali-solubilizable polymer, a crosslinking agent for the polymer, an energy ray-sensitive sulfonic acid-generator, and an energy ray-sensitive carboxylic acid-generator, wherein the energy ray-sensitive sulfonic acid-generator has general structure I (R1-5 = H, nitro, alkyl, etc.; Y1-2 = alkyl, alkenyl, aryl; X- = org. sulfonic acid anion). The compn. provides photoresist of high sensitivity, high resolu., good pattern profile, and improved property dependence on pattern d. and is suitable for semiconductor device fabrication.

IT **470482-89-4**

(sulfonic acid generator in neg.-working photoresist compn.)

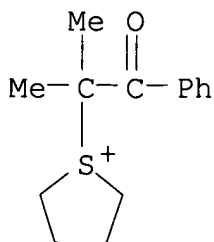
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3  
CMF C4 F9 O3 S

$-\text{O}_3\text{S}- (\text{CF}_2)_3-\text{CF}_3$

IT **470482-89-4**

(sulfonic acid generator in neg.-working photoresist compn.)

L11 ANSWER 36 OF 65 ZCA COPYRIGHT 2005 ACS on STN

141:62100 Photosensitive resin composition containing specific photo-acid generator. Kodama, Kunihiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004177486 A2 20040624, 81 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-340914 20021125.

AB The acid generator  $\text{X1}-\text{c}.\text{ntd}.\text{ot}.\text{Y1Y2S}+\text{CR1R2COA}(\text{COCR3R4S}+\text{Y3Y4})\text{n}.\text{c}.\text{ntd}.\text{ot}.\text{nX2}-$  (I; R1-4 = H, alkyl, aryl; Y1-4 = alkyl, aryl; X1-, X2- = non-nucleophilic anion; A = bond, (n + 1)-valent linkage; n = 1-2; Y1 and Y2, Y3 and Y4, R1 and R2, R3 and R4, R1 and A, R1 and R3, R3 and A may form a ring) is claimed. The photosensitive resin compn. contains I, generating an acid by irradiation of actinic ray. The acid generator shows high transparency at .1 to req. 220 nm beam, and the compn. shows high sensitivity, resolution, wide defocus latitude, and gives patterns with good profile.

IT **704912-17-4 706814-63-3 706814-80-4**

(photosensitive resin compn. contg. sulfonium compd. photo-acid generator)

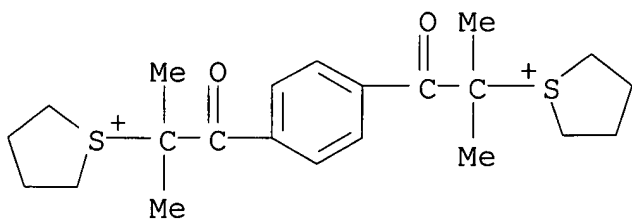
RN 704912-17-4 ZCA

CN Thiophenium, 1,1'-[1,4-phenylenebis(1,1-dimethyl-2-oxo-2,1-ethanediyl)]bis[tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 704912-16-3

CMF C22 H32 O2 S2



CM 2



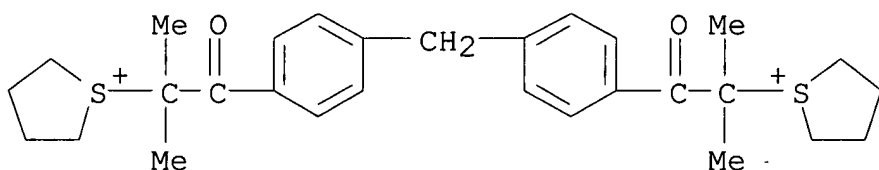
CRN 45187-15-3  
CMF C4 F9 O3 S

$^{-}\text{O}_3\text{S}- (\text{CF}_2)_3-\text{CF}_3$

RN 706814-63-3 ZCA  
CN Thiophenium, 1,1'-[methylenebis[4,1-phenylene(1,1-dimethyl-2-oxo-2,1-ethanediyl)]]bis[tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 706814-62-2  
CMF C29 H38 O2 S2



CM 2

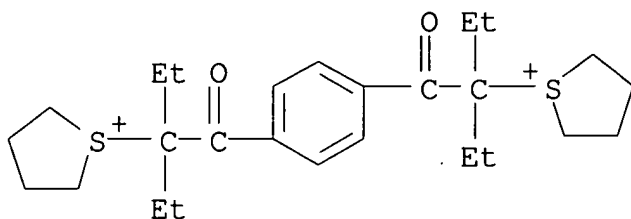
CRN 45187-15-3  
CMF C4 F9 O3 S

$^{-}\text{O}_3\text{S}- (\text{CF}_2)_3-\text{CF}_3$

RN 706814-80-4 ZCA  
CN Thiophenium, 1,1'-[1,4-phenylenebis(1,1-diethyl-2-oxo-2,1-ethanediyl)]]bis[tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 706814-79-1  
CMF C26 H40 O2 S2



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

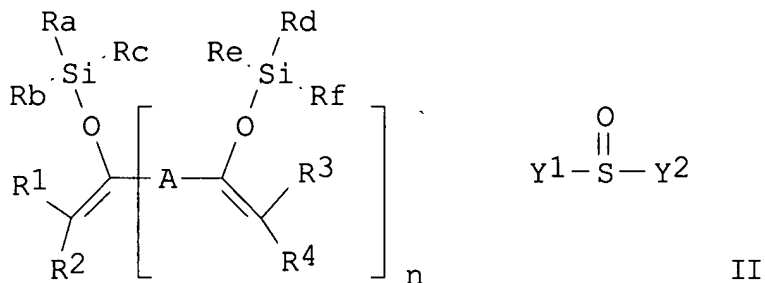
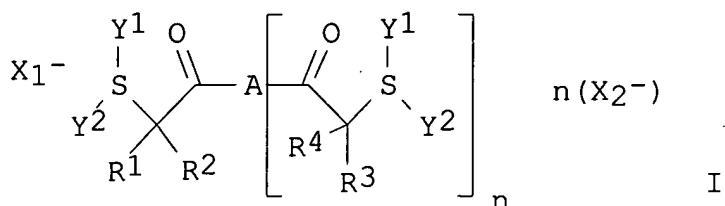
 $\text{-O}_3\text{S- (CF}_2\text{)}_3\text{-CF}_3$ IT **704912-17-4 706814-63-3 706814-80-4**

(photosensitive resin compn. contg. sulfonium compd. photo-acid generator)

L11 ANSWER 37 OF 65 ZCA COPYRIGHT 2005 ACS on STN

141:44866 Manufacture of photoresist composition containing specific sulfonium salt. Kodama, Kunihiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004170806 A2 20040617, 29 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-338385 20021121.

GI



AB The compn. contains I prepd. by (1) forming a sulfonium salt skeleton from silyl ether II and sulfoxide Y1(SO)Y2 [R1-4 = H, alkyl, aryl; Y1-2 = alkyl, aryl, they may form a ring; X1-, X2- = non-nucleophilic anion; n = 0-2; when n = 0, A = alkyl, aryl, alkenyl; when n = 1, A = bond or divalent linkage; when n = 2, A = trivalent linkage; Ra-f = alkyl, aryl; R1 and R2, R3 and R4, R1 and A, R1 and R3, R3 and A may form a ring] and (2) anion exchange. As Ag is not used in prepn. of the sulfonium salt, the photosensitive compn. contains less Ag and shows good storage stability.

IT **610301-26-3P 677351-28-9P 680200-03-7P**  
**704912-07-2P 704912-17-4P 704912-18-5P**  
**704912-20-9P 704912-22-1P 704912-27-6P**

(photoresist contg. specific sulfonium salt prepd. from silyl ether and sulfoxide)

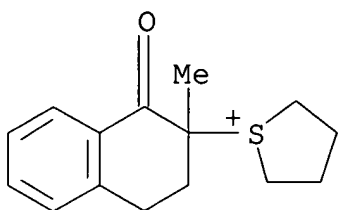
RN 610301-26-3 ZCA

CN Thiophenium, tetrahydro-1-(1,2,3,4-tetrahydro-2-methyl-1-oxo-2-naphthalenyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluorobutanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 477327-87-0

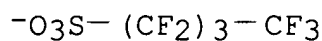
CMF C15 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



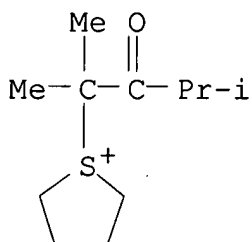
RN 677351-28-9 ZCA

CN Thiophenium, tetrahydro-1-(1,1,3-trimethyl-2-oxobutyl)-, salt with  
1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA  
INDEX NAME)

CM 1

CRN 677351-27-8

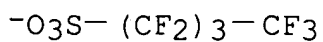
CMF C11 H21 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



RN 680200-03-7 ZCA

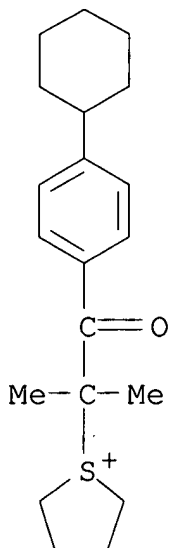
CN Thiophenium, 1-[2-(4-cyclohexylphenyl)-1,1-dimethyl-2-

oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 680200-02-6

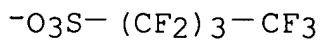
CMF C20 H29 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



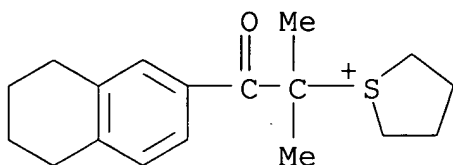
RN 704912-07-2 ZCA

CN Thiophenium, 1-[1,1-dimethyl-2-oxo-2-(5,6,7,8-tetrahydro-2-naphthalenyl)ethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 676502-28-6

CMF C18 H25 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

 $^{-}\text{O}_3\text{S}-(\text{CF}_2)_3-\text{CF}_3$ 

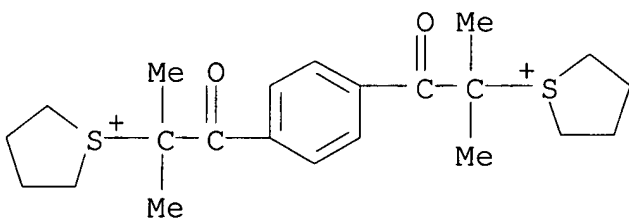
RN 704912-17-4 ZCA

CN Thiophenium, 1,1'-[1,4-phenylenebis(1,1-dimethyl-2-oxo-2,1-ethanediyl)]bis[tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 704912-16-3

CMF C22 H32 O2 S2



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

 $^{-}\text{O}_3\text{S}-(\text{CF}_2)_3-\text{CF}_3$ 

RN 704912-18-5 ZCA

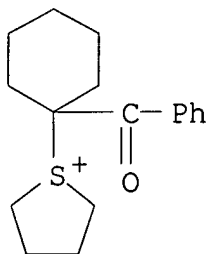
CN Thiophenium, 1-(1-benzoylcyclohexyl)tetrahydro-, salt with 2,4,6-tris(1-methylethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

NAME)

CM 1

CRN 610301-35-4

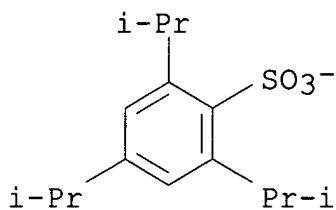
CMF C17 H23 O S



CM 2

CRN 46950-23-6

CMF C15 H23 O3 S



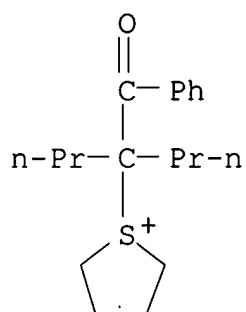
RN 704912-20-9 ZCA

CN Thiophenium, 1-(1-benzoyl-1-propylbutyl)tetrahydro-, salt with  
 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA  
 INDEX NAME)

CM 1

CRN 704912-19-6

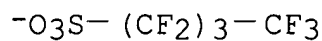
CMF C18 H27 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



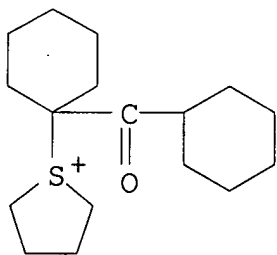
RN 704912-22-1 ZCA

CN Thiophenium, 1-[1-(cyclohexylcarbonyl)cyclohexyl]tetrahydro-, salt  
with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI)  
(CA INDEX NAME)

CM 1

CRN 704912-21-0

CMF C17 H29 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



$^{-}O_3S-(CF_2)_3-CF_3$

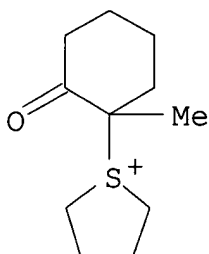
RN 704912-27-6 ZCA

CN Thiophenium, tetrahydro-1-(1-methyl-2-oxocyclohexyl)-, salt with  
1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA  
INDEX NAME)

CM 1

CRN 704912-26-5

CMF C11 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

IT **610301-26-3P 677351-28-9P 680200-03-7P**

**704912-07-2P 704912-17-4P 704912-18-5P**

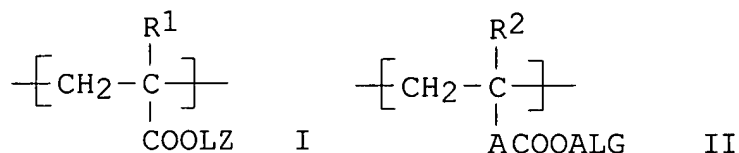
**704912-20-9P 704912-22-1P 704912-27-6P**

(photoresist contg. specific sulfonium salt prepd. from silyl  
ether and sulfoxide)

L11 ANSWER 38 OF 65 ZCA COPYRIGHT 2005 ACS on STN

140:414953 Chemically amplified positive-working far-UV photoresist  
compositions. Sato, Kenichiro; Kodama, Kunihiro (Fuji Photo Film  
Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004151355 A2  
20040527, 75 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
2002-316284 20021030.

GI



AB The compns. contain polymers increasing soly. rate in alk. developers upon acid action and contg. repeating units of A1-3 including [A1; CH<sub>2</sub>C(R1)(CO<sub>2</sub>LZ)] [R1 = H, alkyl; L = single bond, alkylene, ether, ester, etc.; Z = CO<sub>2</sub>H, OH, SO<sub>2</sub>N(R3)<sub>2</sub>, COCH<sub>2</sub>COR<sub>4</sub>, etc.; R3, R5-7 = H, alkyl; R4 = hydrocarbyl; m = 1-20; Z = [CH(R5)CH(R6)O]<sub>m</sub>R<sub>7</sub> when L = single bond], [A2; CH<sub>2</sub>C(R2)(ACO<sub>2</sub>ALG)] [R2 = H, Me; A = single bond, connecting group; ALG = Q, etc.; R11 = Me, Et, Pr, etc.; Z = at. group forming alicyclic hydrocarbylene group with carbon], and [A3; CH<sub>2</sub>C(R3)(A'Z<sub>3</sub>(OH)<sub>p</sub>)] [R3 = H, Me; A' = single bond, divalent connecting group; Z<sub>3</sub> = alicyclic hydrocarbylene having valences of (p + 1); p = 1-3]; sulfonate enone photoacid generator I or II [RB1-B3 = H, alkyl, alkenyl, etc.; RB4-B5 = H, cyano, alkyl, etc.; Y1-2 = alkyl, aryl, aralkyl, etc.; n = 1-4; .gtoreq.2 selected from RB1-B5 and Y1-2 may form a ring; .gtoreq.2 selected from RB1-B5 and Y1-2 may be bonded to via a connecting group so as to have .gtoreq.2 structure of I and/or II; X- = nonnucleophilic anion]; and solvents. The polymers may further contain repeating units of cyclohexanelactone, norbornane lactone, or adamantane lactone. The compns. provide sharp line edge patterns.

IT **690664-04-1 690664-06-3**

(photoacid generator; in chem. amplified pos.-working far-UV photoresist compns. contg. sulfonate enone photoacid generators)

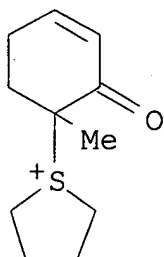
RN 690664-04-1 ZCA

CN Thiophenium, tetrahydro-1-(1-methyl-2-oxo-3-cyclohexen-1-yl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 690664-03-0

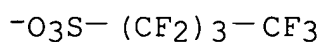
CMF C11 H17 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



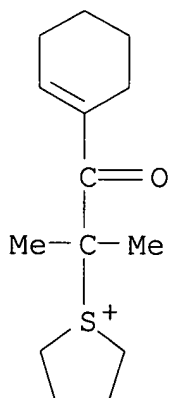
RN 690664-06-3 ZCA

CN Thiophenium, 1-[2-(1-cyclohexen-1-yl)-1,1-dimethyl-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 690664-05-2

CMF C14 H23 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

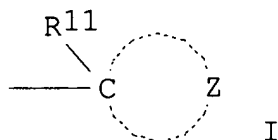
 $-\text{O}_3\text{S}-(\text{CF}_2)_3-\text{CF}_3$ IT **690664-04-1 690664-06-3**

(photoacid generator; in chem. amplified pos.-working far-UV photoresist compns. contg. sulfonate enone photoacid generators)

L11 ANSWER 39 OF 65 ZCA COPYRIGHT 2005 ACS on STN

140:383120 Positive-working photoresist compositions for far-UV microlithography. Sato, Kenichiro; Kodama, Kunihiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004138790 A2 20040513, 64 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-303088 20021017.

GI



AB The compns., which show reduced development defects such as bridging, less PCD (post-coating delay) and PED (post-exposure delay), and wide process margin, and are useful for microphotofabrication with far-IR such as ArF excimer laser light, contain (A) resins which show increased alkali soly. upon action of acids and comprise (A1)  $[\text{CH}_2\text{CR}_1(\text{CO}_2\text{L}_2)]$  ( $\text{R}_1 = \text{H}$ , alkyl;  $\text{L} = \text{direct bond}$ , alkylene, ether bond, ester bond,  $\text{CO}$ , their combination;  $\text{Z} = \text{CO}_2\text{H}$ ,  $\text{OH}$ ;  $\text{COCH}_2\text{COR}_4$ ;  $\text{R}_4 = \text{hydrocarbyl}$ ), (A2)  $[\text{CH}_2\text{CHR}_2(\text{ACO}_2\text{ALG})]$  [ $\text{R}_2 = \text{H}$ ,  $\text{Me}$ ;  $\text{A} = \text{direct bond}$ , linking group;  $\text{ALG} = \text{I}$  ( $\text{R}_{11} = \text{Me}$ ,  $\text{Et}$ ,  $\text{Pr}$ ,  $\text{CHMe}_2$ ,  $\text{Bu}$ ,  $\text{CH}_2\text{CHMe}_2$ ,  $\text{CHMeEt}$ ;  $\text{Z} = \text{at. group forming alicyclyl}$ );  $\text{CR}_{12}\text{R}_{13}\text{R}_{14}$  ( $\text{R}_{12}-\text{R}_{14} = \text{C1-4 alkyl}$ , alicyclyl; .gtoreq.1  $\text{R}_{12}-\text{R}_{14} = \text{alicyclyl}$ ),  $\text{CHR}_{16}\text{OR}_{15}$  ( $\text{R}_{15}$ ,  $\text{R}_{16} = \text{C1-4 alkyl}$ , alicyclyl;  $\text{R}_{15}$  and/or  $\text{R}_{16} = \text{alicyclyl}$ ),  $\text{CR}_{19}\text{R}_{21}\text{CR}_{17}:\text{CR}_{18}\text{R}_{20}$  ( $\text{R}_{17}-\text{R}_{21} = \text{H}$ ,  $\text{C1-4 alkyl}$ , alicyclyl; .gtoreq.1  $\text{R}_{17}-\text{R}_{21} = \text{alicyclyl}$ ;  $\text{R}_{19}$  and/or  $\text{R}_{21} = \text{C1-4 alkyl}$ , alicyclyl),  $\text{CR}_{22}\text{R}_{25}\text{CHR}_{23}\text{COR}_{24}$  ( $\text{R}_{22}-\text{R}_{25} = \text{H}$ ,  $\text{C1-4 alkyl}$ , alicyclyl; .gtoreq.1 of  $\text{R}_{22}-\text{R}_{25} = \text{alicyclyl}$ ;  $\text{R}_{23}$  and  $\text{R}_{24}$  may be bonded to form a ring)], and (A3)  $[\text{CH}_2\text{CR}_3[\text{A}_3\text{Z}_3(\text{OH})_p]]$  [ $\text{R}_3 = \text{H}$ ,  $\text{Me}$ ;  $\text{A}_3 = \text{direct bond}$ , linking group;  $\text{Z}_3 = (\text{p} + 1)\text{-valent alicyclyl}$ ;  $\text{p} = 1\text{-}3$ ], (B)  $\text{R}_{1b}\text{R}_{2b}\text{R}_{3b}\text{S}^+ \text{X}^-$  ( $\text{R}_{1b}-\text{R}_{3b} = \text{alkyl}$ ;  $\text{X}^- = \text{anion}$ ) which generate acids upon irradiation with actinic ray or radiation, and (C) solvents.

IT **677351-28-9 677351-30-3**

(far-UV pos.-working photoresist compns. contg.)

alkali-solubilizable resins and trialkylsulfonium salts for reduced post-coating and post-exposure delays and wide process margin)

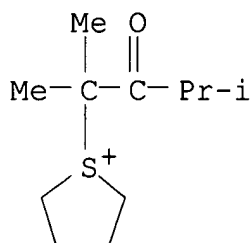
RN 677351-28-9 ZCA

CN Thiophenium, tetrahydro-1-(1,1,3-trimethyl-2-oxobutyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 677351-27-8

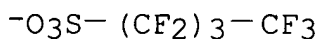
CMF C11 H21 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



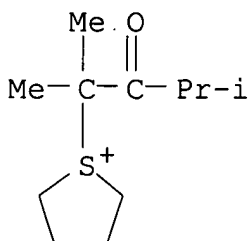
RN 677351-30-3 ZCA

CN Thiophenium, tetrahydro-1-(1,1,3-trimethyl-2-oxobutyl)-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 677351-27-8

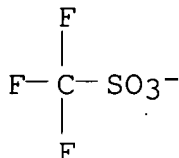
CMF C11 H21 O S



CM 2

CRN 37181-39-8

CMF C F3 O3 S



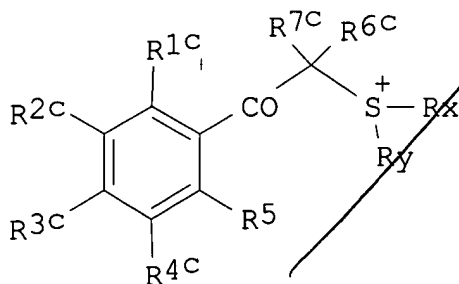
IT 677351-28-9 677351-30-3

(far-UV pos.-working photoresist compns. contg.  
alkali-solubilizable resins and trialkylsulfonium salts for  
reduced post-coating and post-exposure delays and wide process  
margin)

L11 ANSWER 40 OF 65 ZCA COPYRIGHT 2005 ACS on STN

140:383119 Chemically amplified positive resist compositions showing  
stable post-exposure and -coating delay. Sato, Kenichiro (Fuji  
Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004138663  
A2 20040513, 68 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
2002-300750 20021015.

GI



AB The compns., showing high transparency to far-UV light esp. ArF  
excimer laser light, comprise (A) resins increasing soly. in acids  
by acid action and having unit  $\text{CH}_2\text{CR}_1\text{CO}_2\text{LZ}$  [ $\text{R}_1 = \text{H, Me}$ ;  $\text{L} = \text{single}$   
bond, alkylene, ether, ester, and/or  $\text{CO}$ ;  $\text{Z} = \text{CO}_2\text{H, OH, COCH}_2\text{COR}_4$  ( $\text{R}_4$   
= hydrocarbyl)],  $\text{CH}_2\text{CR}_2\text{ACO}_2\text{ALG}$  ( $\text{R}_2 = \text{H, Me}$ ;  $\text{A} = \text{single bond}$ ,

bridging group; ALG = prescribed alicyclic substituent etc.), and  $\text{CH}_2\text{CR}_3\text{A}_3\text{Z}_3(\text{OH})_p$  [ $\text{R}_3 = \text{H}, \text{Me}$ ;  $\text{A}_3 = \text{single bond, bivalent bridging group}$ ;  $\text{Z}_3 = (p + 1)\text{-valent alicyclic hydrocarbyl}$ ;  $p = 1\text{-}3$ ], (B) radiation-sensitive acid generators I ( $\text{R}_{1c}\text{-R}_{5c} = \text{H, alkyl, alkoxy, halo}$ ;  $\text{R}_{6c}, \text{R}_{7c} = \text{H, alkyl, aryl}$ ;  $\text{R}_x, \text{R}_y = \text{alkyl, 2-oxoalkyl, alkoxy carbonylmethyl, etc.}$ ;  $\text{X}^- = \text{sulfonate, carboxylate, sulfonylimide}$ ), and (C) solvents.

IT **470482-89-4**

(photoacid generators; pos. resists showing wide process margin and stable post-exposure and -coating delay for ArF excimer laser-utilized photofabrication)

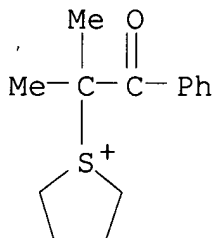
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluorobutanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$^-\text{O}_3\text{S}^-(\text{CF}_2)_3\text{CF}_3$

IT **470482-89-4**

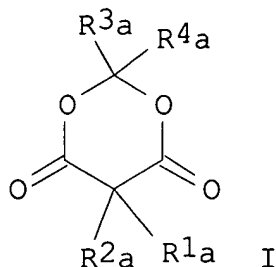
(photoacid generators; pos. resists showing wide process margin and stable post-exposure and -coating delay for ArF excimer laser-utilized photofabrication)

L11 ANSWER 41 OF 65 ZCA COPYRIGHT 2005 ACS on STN

140:365656 Positive-working resist composition containing specific phenacylsulfonium compound and specific meldrum acid for improved sensitivity and profile characteristic. Yamanaka, Tsukasa;

Fujimori, Toru (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai  
Tokkyo Koho JP 2004126302 A2 20040422, 56 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 2002-291445 20021003.

GI



AB The pos.-working resist compn. comprises (A) a resin capable of increasing its soly in the developer upon reaction with an acid, (B) a phenacylsulfonium compd.  $\text{ArC}(\text{:O})\text{-CR}_5\text{R}_7\text{-S+Y}_1\text{Y}_2\text{X-}$  (Ar = aryl, hetericyclic arom.; R6 = H, cyano, alkyl, etc.; R7 = alkyl, aryl; Y1,2 = alkyl, aryl, etc.; and X- = nonnucleophilic anion) and meldrum acid I (T1a,2a = H, alkyl, etc.; and R3a,4a = alkyl, cycloalkyl, etc.). Further, compn. comprises a N-contg. base compd.

IT **470482-89-4P**

(photoacid; pos.-working resist compn. contg. specific phenacylsulfonium compd. and specific meldrum acid for improved sensitivity and profile characteristic)

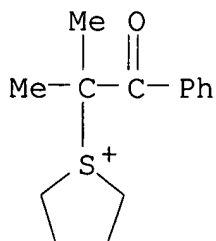
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluoronic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S





CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

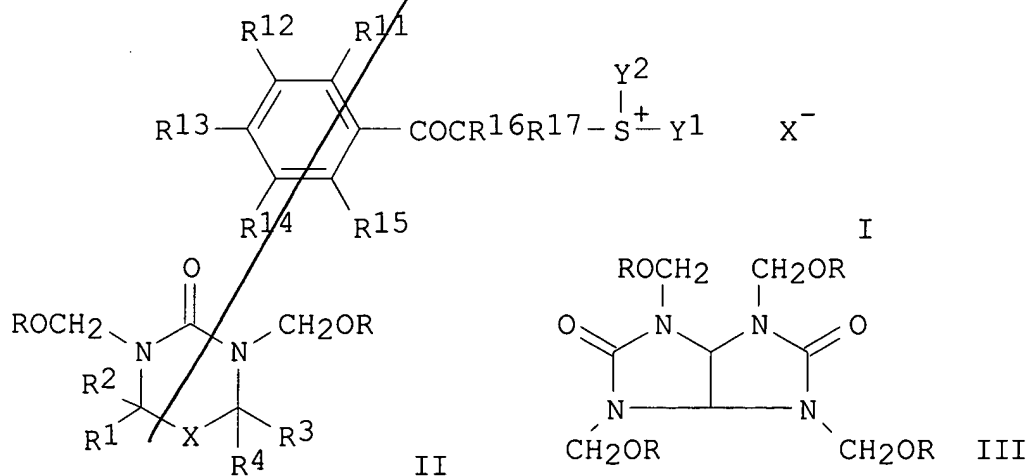
 $^{-}O_3S-(CF_2)_3-CF_3$ IT **470482-89-4P**

(photoacid; pos.-working resist compn. contg. specific phenacylsulfonium compd. and specific meldrum acid for improved sensitivity and profile characteristic)

L11 ANSWER 42 OF 65 ZCA COPYRIGHT 2005 ACS on STN

140:347504 Negative-working resist compositions containing acid generator and crosslinker which reacts in the presence of an acid. Takahashi, Omote; Yasunami, Shoichiro; Shirakawa, Hiroshi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004117876 A2 20040415, 61 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-281425 20020926.

GI



AB The disclosed neg.-working resist compn. contains an alkali-sol. polymer, a crosslinking agent which crosslinks the polymer in the presence of an acid, and a photo-acid generator. The photoacid generator is a compd. of the formula I (Y1, Y2 = alkyl, alkenyl;

alkyl group may contain OH or ether bond, Y1 and Y2 may combine to form a ring; R11-15 = H, NO2, halo, alkyl, alkoxy, alkyloxycarbonyl, aryl, acylamino; adjacent two of R11-15 may form a ring; R16, R17 = H, CN, alkyl, aryl; one of R11-15 may combined with one of Y1, Y2, R16, and R17 to form a ring). The crosslinking agent is selected from compd of formula II, III, (R = H, alkyl, acyl; R1-4 = H, OH, alkyl, alkoxy; X = bond, CH2, O) and (ROCH2)2NCON(CH2OR)2 (R is same as in II and III). The resist has superior image resoln. and high sensitivity toward x-ray and electron beam, and useful for lithog. fabrication of large-scale integrated circuits.

IT **470482-89-4**

(acid generator; photoacid generator type neg. working radiation resist contg. alcoxymethylated melamine crosslinker and)

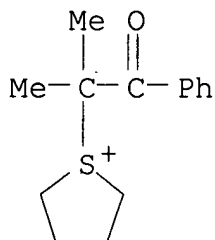
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$\text{-O}_3\text{S- (CF}_2\text{)}_3\text{-CF}_3$

IT **470482-89-4**

(acid generator; photoacid generator type neg. working radiation resist contg. alcoxymethylated melamine crosslinker and)

L11 ANSWER 43 OF 65 ZCA COPYRIGHT 2005 ACS on STN

140:347500 Positive-working resists suppressing development defects and forming precision square profiles. Fujimori, Toru (Fuji Photo Film

Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004117677 A2  
 20040415, 69 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
 2002-279190 20020925.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The resists, useful for photofabrication of fine contact holes, comprise (A) resins having unit chosen from I, CR12R13R14, CH(OR15)R16, CR17(CR19R21):CR18R20, CR22R25CHR23COR24, II, and/or III [R11 = Me, Et, Pr, Bu; Z = alicyclic hydrocarbon; R12-R16, R22-R25 = C1-4 alkyl, alicyclic hydrocarbyl (where .gtoreq.1 of R12-R14, R15 and/or R16, and of R22-R25 are alicyclic hydrocarbyl); R17-R21 = H, C1-4 alkyl, alicyclic hydrocarbyl (R19 and/or R21 are not H)] and increasing soly. in alkali developers upon acid action, (B) radiation-sensitive acid generators, and (C) compds. chosen from IV-VII [A, B, D, E = H, (cyclo)alkyl, aryl, aralkyl] each contg. C.gtoeq.8 alkyl group.

IT **470482-89-4 680200-03-7**

(radiation-sensitive acid generators; chem. amplified pos. resists contg. carbonyloxycarbonyl-contg. long-chain hydrocarbons and suppressing development defects)

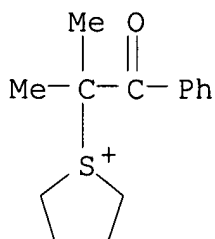
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluorobutanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

 $^{-}\text{O}_3\text{S}- (\text{CF}_2)_3-\text{CF}_3$ 

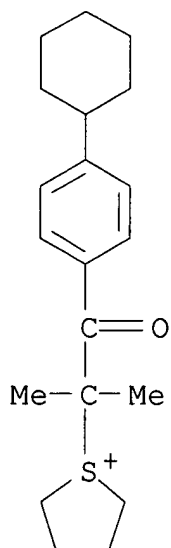
RN 680200-03-7 ZCA

CN Thiophenium, 1-[2-(4-cyclohexylphenyl)-1,1-dimethyl-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 680200-02-6

CMF C20 H29 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

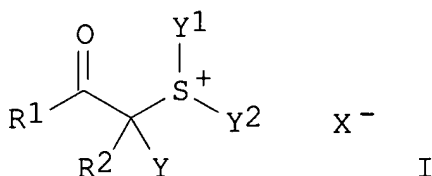
 $^{-}\text{O}_3\text{S}- (\text{CF}_2)_3-\text{CF}_3$ IT **470482-89-4 680200-03-7**

(radiation-sensitive acid generators; chem. amplified pos. resists contg. carbonyloxycarbonyl-contg. long-chain hydrocarbons and suppressing development defects)

L11 ANSWER 44 OF 65 ZCA COPYRIGHT 2005 ACS on STN

140:329525 Photosensitive composition and acid generator. Kodama, Kunihiro (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 1406122 A2 20040407, 83 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK. (English). CODEN: EPXXDW. APPLICATION: EP 2003-21631 20030925. PRIORITY: JP 2002-279273 20020925.

GI



AB A photosensitive compn. comprises an acid generator of the formula I (R1 = alkyl; R2 = H, alkyl, aryl; Y = alkyl; Y1, Y2 = alkyl, aryl, aralkyl, hetero atom-contg. arom.; R1 and R2 may be bonded to each other to form a ring; R2 and Y may be bonded to each other to form a ring; Y1 and Y2 may be bonded to each other to form a ring; two or more structures of the general formula I may be bonded to each other at any position of R1, R2 or Y, or Y1 or Y2 via a connecting group; X = non-nucleophilic anion)., an alk. developer-sol. resin, an acid crosslinking agent, a basic compd., and a surfactant. The object of the present invention is to provide an acid generator that has a high transparency against rays of not longer than 220 nm, has an enhanced photodegrdn. ability as compared with conventionally known acid generators, thereby revealing high sensitivity, and providing a good resist profile. The photosensitive compn. of the present invention has excellent sensitivity and pattern profile.

IT **677351-28-9P**

(acid generator; photosensitive compn. and acid generator)

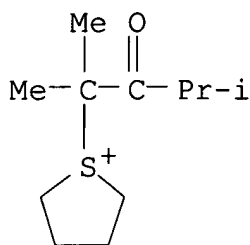
RN 677351-28-9 ZCA

CN Thiophenium, tetrahydro-1-(1,1,3-trimethyl-2-oxobutyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 677351-27-8

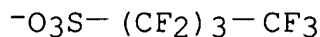
CMF C11 H21 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



IT 470482-89-4 677351-29-0 677351-30-3  
 677351-31-4 677351-32-5 677351-36-9  
 677351-37-0 677351-43-8 677351-45-0  
 677351-47-2 677351-48-3 677351-50-7  
 677351-52-9 677351-54-1 677351-56-3  
 677351-57-4 677351-58-5 677351-60-9

(acid generator; photosensitive compn. and acid generator)

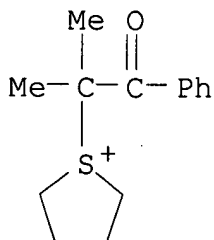
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt  
 with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI)  
 (CA INDEX NAME)

CM 1

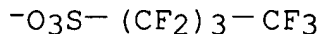
CRN 470482-88-3

CMF C14 H19 O S



CM 2

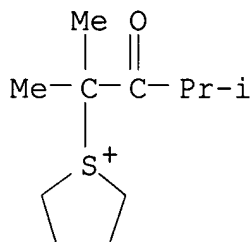
CRN 45187-15-3  
CMF C4 F9 O3 S



RN 677351-29-0 ZCA  
CN Thiophenium, tetrahydro-1-(1,1,3-trimethyl-2-oxobutyl)-, salt with  
1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic  
acid (1:1) (9CI) (CA INDEX NAME)

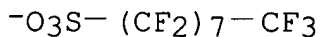
CM 1

CRN 677351-27-8  
CMF C11 H21 O S



CM 2

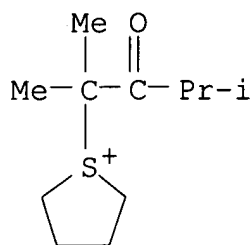
CRN 45298-90-6  
CMF C8 F17 O3 S



RN 677351-30-3 ZCA  
CN Thiophenium, tetrahydro-1-(1,1,3-trimethyl-2-oxobutyl)-, salt with  
trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

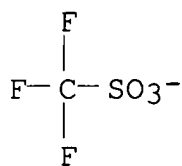
CRN 677351-27-8  
CMF C11 H21 O S



CM 2

CRN 37181-39-8

CMF C F3 O3 S



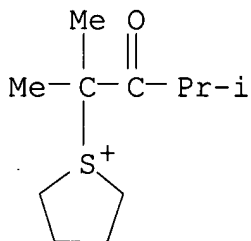
RN 677351-31-4 ZCA

CN Thiophenium, tetrahydro-1-(1,1,3-trimethyl-2-oxobutyl)-, salt with  
 1,1,2,2,3,3,4,4,4-nonafluoro-N-[(nonafluorobutyl)sulfonyl]-1-  
 butanesulfonamide (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 677351-27-8

CMF C11 H21 O S

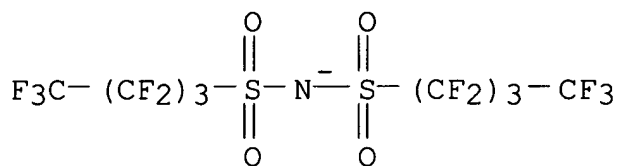


CM 2

CRN 191101-38-9

CMF C8 F18 N O4 S2





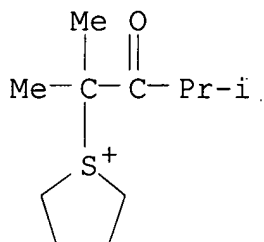
RN 677351-32-5 ZCA

CN Thiophenium, tetrahydro-1-(1,1,3-trimethyl-2-oxobutyl)-, salt with tris[(trifluoromethyl)sulfonyl]methane (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 677351-27-8

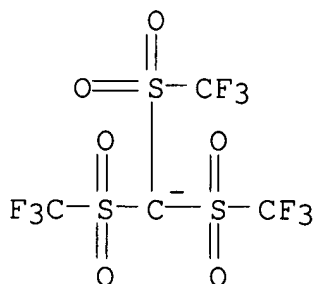
CMF C11 H21 O S



CM 2

CRN 130447-45-9

CMF C4 F9 O6 S3

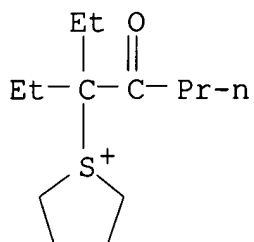


RN 677351-36-9 ZCA

CN Thiophenium, 1-(1,1-diethyl-2-oxopentyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluorobutanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

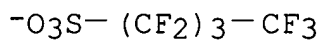
CM 1

CRN 677351-35-8  
CMF C13 H25 O S



CM 2

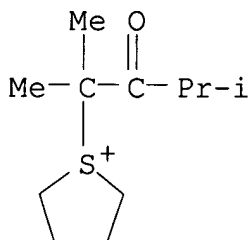
CRN 45187-15-3  
CMF C4 F9 O3 S



RN 677351-37-0 ZCA  
CN Thiophenium, tetrahydro-1-(1,1,3-trimethyl-2-oxobutyl)-, salt with  
pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

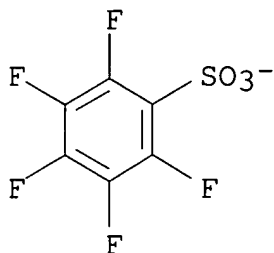
CM 1

CRN 677351-27-8  
CMF C11 H21 O S



CM 2

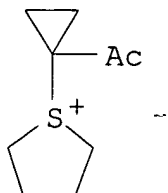
CRN 46377-88-2  
CMF C6 F5 O3 S



RN 677351-43-8 ZCA  
 CN Thiophenium, 1-(1-acetylcyclopropyl)tetrahydro-, salt with  
 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA  
 INDEX NAME)

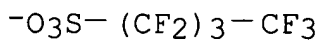
CM 1

CRN 677351-42-7  
 CMF C9 H15 O S



CM 2

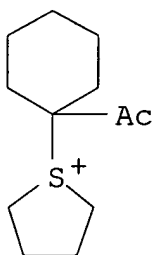
CRN 45187-15-3  
 CMF C4 F9 O3 S



RN 677351-45-0 ZCA  
 CN Thiophenium, 1-(1-acetylcyclohexyl)tetrahydro-, salt with  
 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA  
 INDEX NAME)

CM 1

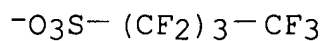
CRN 677351-44-9  
 CMF C12 H21 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



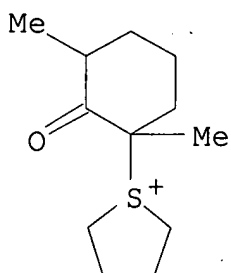
RN 677351-47-2 ZCA

CN Thiophenium, 1-(1,3-dimethyl-2-oxocyclohexyl)tetrahydro-, salt with  
1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA  
INDEX NAME)

CM 1

CRN 677351-46-1

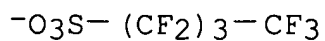
CMF C12 H21 O S



CM 2

CRN 45187-15-3

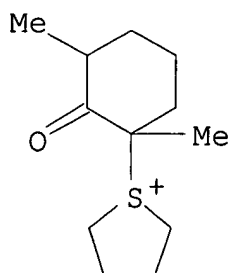
CMF C4 F9 O3 S



RN 677351-48-3 ZCA  
CN Thiophenium, 1-(1,3-dimethyl-2-oxocyclohexyl)tetrahydro-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

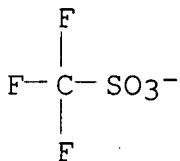
CM 1

CRN 677351-46-1  
CMF C12 H21 O S



CM 2

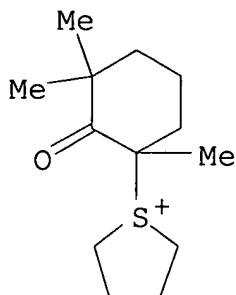
CRN 37181-39-8  
CMF C F3 O3 S



RN 677351-50-7 ZCA  
CN Thiophenium, tetrahydro-1-(1,3,3-trimethyl-2-oxocyclohexyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butan-1-yl sulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

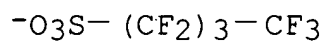
CRN 677351-49-4  
CMF C13 H23 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



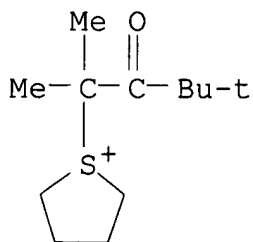
RN 677351-52-9 ZCA

CN Thiophenium, tetrahydro-1-(1,1,3,3-tetramethyl-2-oxobutyl)-, salt  
with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI)  
(CA INDEX NAME)

CM 1

CRN 677351-51-8

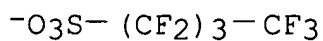
CMF C12 H23 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



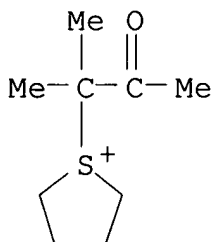
RN 677351-54-1 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxopropyl)tetrahydro-, salt with  
1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA  
INDEX NAME)

CM 1

CRN 677351-53-0

CMF C9 H17 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

 $^{-}\text{O}_3\text{S}-(\text{CF}_2)_3-\text{CF}_3$ 

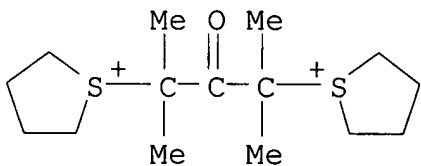
RN 677351-56-3 ZCA

CN Thiophenium, 1,1'-(1,1,3,3-tetramethyl-2-oxo-1,3-  
propanediyl)bis[tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-  
1-butanesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

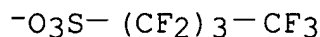
CRN 677351-55-2

CMF C15 H28 O S2



CM 2

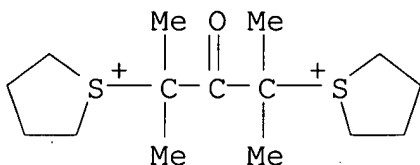
CRN 45187-15-3  
CMF C4 F9 O3 S



RN 677351-57-4 ZCA  
CN Thiophenium, 1,1'-(1,1,3,3-tetramethyl-2-oxo-1,3-propanediyl)bis[tetrahydro-, salt with trifluoromethanesulfonic acid (1:2) (9CI) (CA INDEX NAME)

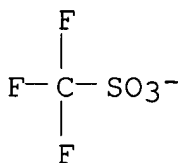
CM 1

CRN 677351-55-2  
CMF C15 H28 O S2



CM 2

CRN 37181-39-8  
CMF C F3 O3 S

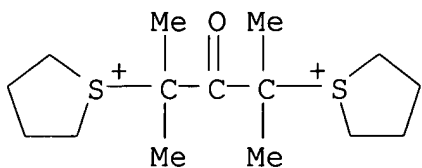


RN 677351-58-5 ZCA  
CN Thiophenium, 1,1'-(1,1,3,3-tetramethyl-2-oxo-1,3-propanediyl)bis[tetrahydro-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-1-octanesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM .1

CRN 677351-55-2  
CMF C15 H28 O S2

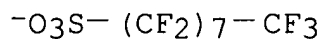




CM 2

CRN 45298-90-6

CMF C8 F17 O3 S



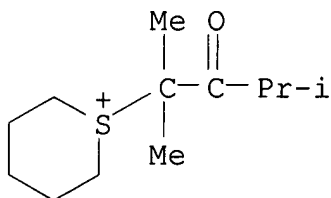
RN 677351-60-9 ZCA

CN 2H-Thiopyranium, tetrahydro-1-(1,1,3-trimethyl-2-oxobutyl)-, salt  
with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI)  
(CA INDEX NAME)

CM 1

CRN 677351-59-6

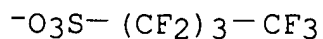
CMF C12 H23 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

IT **677351-28-9P**

(acid generator; photosensitive compn. and acid generator)

IT **470482-89-4 677351-29-0 677351-30-3****677351-31-4 677351-32-5 677351-36-9****677351-37-0 677351-43-8 677351-45-0**

677351-47-2 677351-48-3 677351-50-7  
677351-52-9 677351-54-1 677351-56-3  
677351-57-4 677351-58-5 677351-60-9

(acid generator; photosensitive compn. and acid generator)

L11 ANSWER 45 OF 65 ZCA COPYRIGHT 2005 ACS on STN

140:312008 Positive-working resist composition with improved precision in response to light. Fujimori, Toru (Fujii Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004102019 A2 20040402, 75 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-265400 20020911.

AB Title resist compn. comprises (A) a compd. generating acid upon actinic ray irradiation, (B) a fluorine-contg. polymer which decomposes and has increased solubility in alk. developing liq. in the presence of an acid, and (C) at least one nitrogen-contg. ionic basic compd.

IT **470482-89-4**

(pos.-working resist compn. with improved precision in response to light)

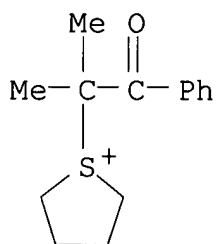
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

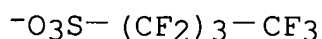
CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



IT **470482-89-4**

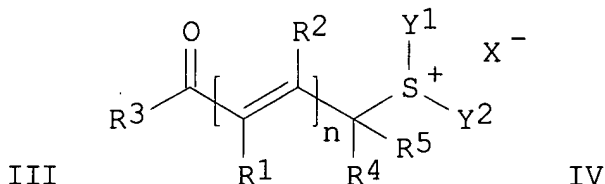
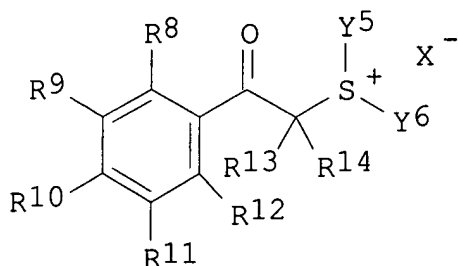
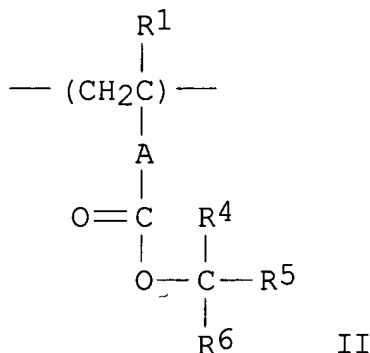
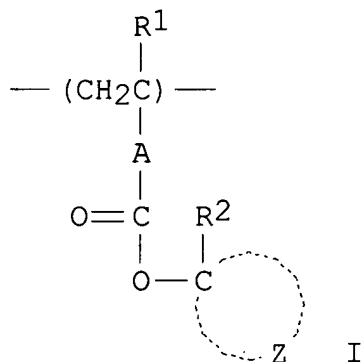
(pos.-working resist compn. with improved precision in response to light)

L11 ANSWER 46 OF 65 ZCA COPYRIGHT 2005 ACS on STN

140:311995 Positive resist composition and pattern formation method.

Nishiyama, Fumiyuki; Sato, Kenichiro; Kodama, Kunihiro (Fuji Photo Film Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2004063827 A1 20040401, 56 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-669603 20030925. PRIORITY: JP 2002-287252 20020930; JP 2002-287393 20020930.

GI



AB A pos. resist compn. comprising: (A) a resin having alicyclic hydrocarbon groups in side chains, contg. repeating units of general formulas I and II ( $R_1$  = H, alkyl; A = linkage group,  $R_2$  = C1-4-alkyl; Z = group forming an alicyclic hydrocarbon group together with the carbon atom;  $R_4$ - $R_6$  = hydrocarbon group, alicyclic hydrocarbon) which increases the soly. in an alkali developing soln. by the action of an acid; and (B) a particular sulfonium compd. having a general structures of formulas III and IV ( $R_1$ - $R_3$  = H, alkyl, alkenyl, aryl, alkoxy;  $R_4$ ,  $R_5$  = H, cyano, alkyl, aryl, alkoxy;  $Y_1$ ,  $Y_2$  = alkyl, aryl, aralkyl, heteroatom-contg. arom. group;  $n$  = 1-4;  $R_8$ - $R_{12}$  = H, nitro, halogen, alkyl, alkoxy, alkyloxycarbonyl, aryl, acylamino, with the proviso that at least

two of R8-R12 may be bonded with each other to form a ring; R13 = H, cyano, alkyl, aryl; R14 = alkyl, aryl; Y5, Y6 = alkyl, aryl, aralkyl, heteroatom-contg. arom. group, Y5 and Y6 may be bonded with each other to form a ring; X- = non-nucleophilic anion) which is capable of generating an acid upon irradiation with an actinic ray or radiation. The object of the present invention is to provide a positive resist compound that is used suitably in micro-photofabrication utilizing far UV light, notably ArF excimer laser beam, and offers excellent line edge roughness performance and excellent pattern collapse performance.

IT 470482-89-4 610301-08-1 610301-09-2  
676502-26-4 676502-27-5 676502-29-7

(photoacid generator; positive resist compound and pattern formation method)

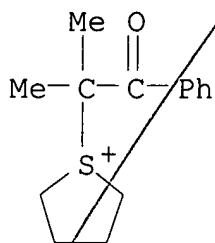
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butananesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

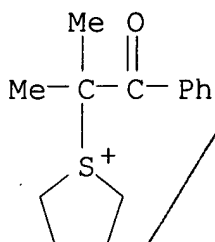
$-\text{O}_3\text{S}- (\text{CF}_2)_3-\text{CF}_3$

RN 610301-08-1 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

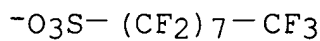
CM 1

CRN 470482-88-3  
CMF C14 H19 O S



CM 2

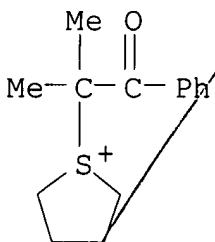
CRN 45298-90-6  
CMF C8 F17 O3 S



RN 610301-09-2 ZCA  
CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt  
with 3,5-bis(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA  
INDEX NAME)

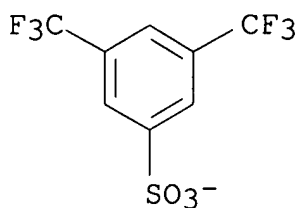
CM 1

CRN 470482-88-3  
CMF C14 H19 O S



CM 2

CRN 213740-84-2  
CMF C8 H3 F6 O3 S

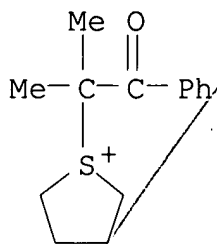


RN 676502-26-4 ZCA  
 CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt  
 with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

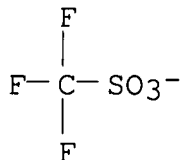
CMF C14 H19 O/S



CM 2

CRN 37181-39-8

CMF C F3 O3 S

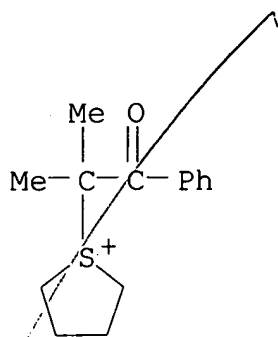


RN 676502-27-5 ZCA  
 CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt  
 with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

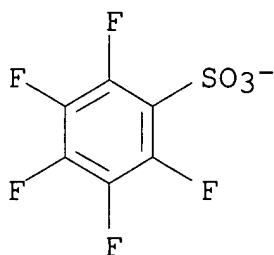
CMF C14 H19 O S



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



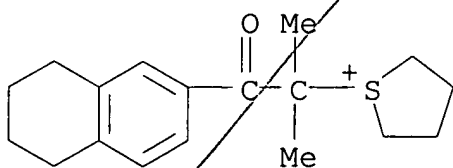
RN 676502-29-7 ZCA

CN Thiophenium, 1-[1,1-dimethyl-2-oxo-2-(5,6,7,8-tetrahydro-2-naphthalenyl)ethyl]tetrahydro-, salt with 3,5-bis(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 676502-28-6

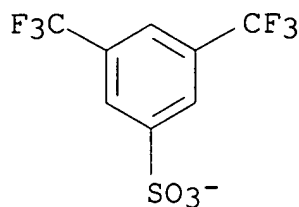
CMF C18 H25 O S



CM 2

CRN 213740-84-2

CMF C8 H3 F6 O3 S



IT **470482-89-4 610301-08-1 610301-09-2**  
**676502-26-4 676502-27-5 676502-29-7**

(photoacid generator; pos. resist compn. and pattern formation method)

L11 ANSWER 47 OF 65 ZCA COPYRIGHT 2005 ACS on STN

140:261393 Resist composition for preparation of contact hole pattern. Sato, Kenichiro; Fujimori, Toru; Tsuchimura, Toshitaka (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004077817 A2 20040311, 123 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-238272 20020819.

AB Title resist compn. providing good defocus latitude, profile, and side lobe margin comprises (A) a compd. generating acid upon radiation, (B) a resin which has increased soly. in alk. developing liq. in the presence of an acid, and (C) a compd. contg. a long alkyl group and an alkali-sol. group.

IT **470482-89-4**  
 (resist compn. for prepn. of contact hole pattern)

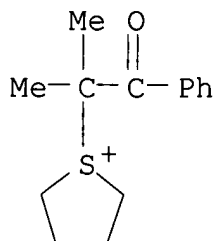
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S





CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

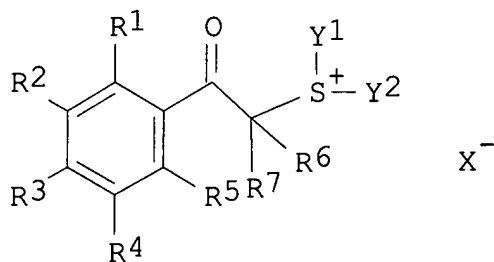
 $^{-}O_3S-(CF_2)_3-CF_3$ IT **470482-89-4**

(resist compn. for prepn. of contact hole pattern)

L11 ANSWER 48 OF 65 ZCA COPYRIGHT 2005 ACS on STN

140:225803 Positively working photoresist composition sensitive to x-ray, electron beam, and ion beam. Yasunami, Shoichiro; Shirakawa, Hiroshi; Mizutani, Kazuyoshi; Takahashi, Omote (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004070055 A2 20040304, 41 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-230047 20020807.

GI



AB The compn. contains (a) an aq. alkali (almost) insol. phenol-type polymer, which is converted to sol. by an acid, (b) a sulfonium compd. I [R1-R5 = H, NO<sub>2</sub>, halogen, alkyl, alkoxy, alkyloxycarbonyl, aryl, acylamino; R1-R5 may form ring; R6, R7 = H, cyano, alkyl, aryl; Y1, Y2 = (ether- or sulfide-contg.) alkyl, alkenyl; X = org. sulfonate anion] which releases sulfonic acid under x ray, electron beam, or ion beam, and (c) a nonionic compd. involving diazosulfone, disulfone, iminosulfonate, nitrobenzyl ester, alkanesulfonate, and/or triazine structure which releases sulfonic acid under x ray, electron beam, or ion beam. The compn. is useful for fine processing in electronic device fabrication.

IT **470482-89-4**

(in pos. working photoresist compn. sensitive to x-ray, electron beam, and ion beam)

RN 470482-89-4 ZCA

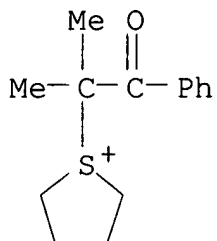
CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt

with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI)  
(CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$\text{-O}_3\text{S- (CF}_2\text{)}_3\text{-CF}_3$

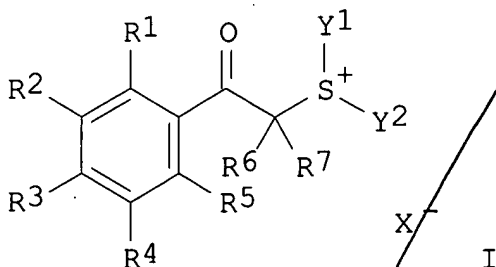
IT **470482-89-4**

(in pos. working photoresist compn. sensitive to x-ray, electron beam, and ion beam)

L11 ANSWER 49 OF 65 ZCA COPYRIGHT 2005 ACS on STN

140:207460 Soft x-ray sensitive resist resin composition for semiconductor device fabrication. Uenishi, Kazuya; Kodama, Kunihiro; Fujimori, Toru (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004053934 A2 20040219, 43 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-211384 20020719.

GI



AB The title compn. contains an alkali-solubilizable resin by reacting with an acid and a light- or radiation-sensitive acid generator, wherein the resin has functional group  $-O-C(R1a)(R2a)-O-W-O-R3a$  ( $R1a-2a = H$ , C1-4 alkyl;  $W = 2$ -valent org. group;  $R3a = C11-20$  alkyl, C11-30 aryl, C12-30 aralkyl) and wherein the acid generator has general structure I ( $R1-5 = H$ , nitro, halo, alkyl, etc.;  $R6 = H$ , cyano, alkyl, aryl;  $R7 =$  alkyl, aryl;  $Y1-2 =$  alkyl, aryl, aralkyl, etc.;  $X^- =$  non-nucleophilic anion). The compn. shows good sensitivity and provides photoresist of high resolu., good pattern profile, LER properties, and high dry etching-resistance.

IT **470482-89-4 610301-08-1 610301-09-2**  
**610301-30-9 661461-23-0**

(acid generator; soft x-ray sensitive resist resin compn.)

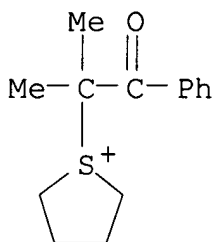
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$-O_3S-(CF_2)_3-CF_3$

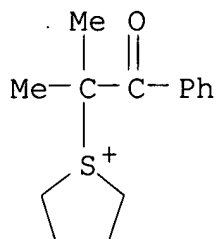
RN 610301-08-1 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-1-octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

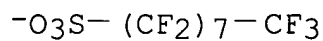
CMF C14 H19 O S



CM 2

CRN 45298-90-6

CMF C8 F17 O3 S



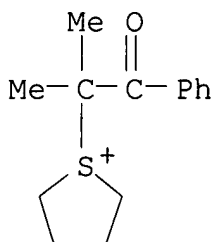
RN 610301-09-2 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt  
with 3,5-bis(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA  
INDEX NAME)

CM 1

CRN 470482-88-3

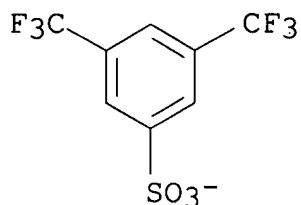
CMF C14 H19 O S



CM 2

CRN 213740-84-2

CMF C8 H3 F6 O3 S



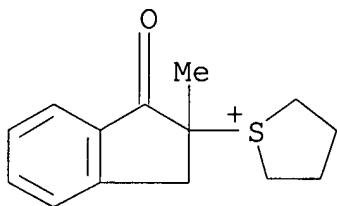
RN 610301-30-9 ZCA

CN Thiophenium, 1-(2,3-dihydro-2-methyl-1-oxo-1H-inden-2-yl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 610301-29-6

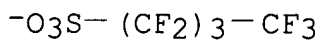
CMF C14 H17 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



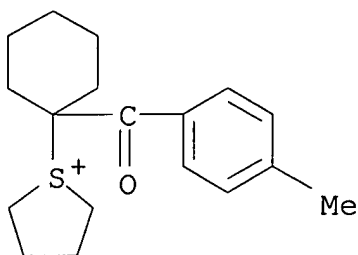
RN 661461-23-0 ZCA

CN Thiophenium, tetrahydro-1-[1-(4-methylbenzoyl)cyclohexyl]-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 661461-22-9

CMF C18 H25 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

 $\text{-O}_3\text{S- (CF}_2\text{)}_3\text{-CF}_3$ 

IT **470482-89-4 610301-08-1 610301-09-2**  
**610301-30-9 661461-23-0**

(acid generator; soft x-ray sensitive resist resin compn.)

L11 ANSWER 50 OF 65 ZCA COPYRIGHT 2005 ACS on STN

140:189988 Positive resist compositions for manufacture of semiconductor devices. Sato, Kenichiro; Sugasaki, Atsushi; Kunita, Kazuto (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004053822 A2 20040219, 82 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-209680 20020718.

AB The compns. comprise (A) polymers having repeating units  $\text{CH}_2\text{C}(\text{CH}_2\text{OXR}_1)[\text{C}(\text{:O})\text{OR}_2]$  ( $\text{R}_1 = \text{H}$ , hydrocarbyl;  $\text{R}_2 = \text{hydrocarbyl}$ ;  $\text{X} = \text{single bond, carbonyl}$ ) and showing increase in dissoln. rate for alkali developers by the action of acids, (B) compds. generating acids by irradiation of actinic light beam or radiation, (C) solvents, and (D) surfactants. The compns. show good line edge roughness, high resolu. in formation of contact holes, and good exposure margin.

IT **470482-89-4**

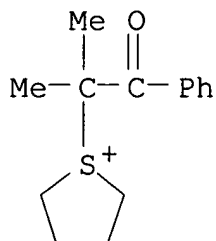
(photoacid generators; pos. resists contg. acrylate polymers having specific repeating units for manuf. of semiconductors)

RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluorobutanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

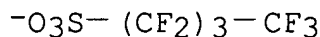
CM 1

CRN 470482-88-3  
CMF C14 H19 O S



CM 2

CRN 45187-15-3  
CMF C4 F9 O3 S



IT **470482-89-4**

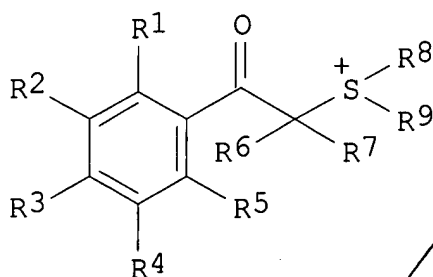
(photoacid generators; pos. resists contg. acrylate polymers having specific repeating units for manuf. of semiconductors)

L11 ANSWER 51 OF 65 ZCA COPYRIGHT 2005 ACS on STN

139:401544 Positive-working chemically amplification type photoresist composition showing improved pattern profile and line edge roughness. Sato, Kenichiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003330194 A2 (2003)1119, 81 pp.

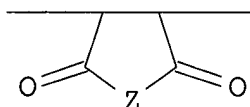
(Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-138810 20020514.

GI



X-

I



II

AB The title photoresist compn., esp. sensitive to a ArF excimer laser stepper, comprises (A) a photoacid generator represented by I [R1-5

= H, alkyl, alkoxy, halo; R6, R7 = H, alkyl, aryl; R8, R9 = alkyl, 2-oxoalkyl, alkoxy-carbonylmethyl, allyl, vinyl; X- = sulfonic, carboxylic, sulfonylimide anion] or S+(R1)(R2)(R3).X- [R1-3 = alkyl, 2-oxoalkyl; X- = anion] and (B) an alk.-developable resin contg. structural repeating units of CH(R1):CH(OR2) [R1 = H, hydrocarbyl; R2 = hydrocarbyl], II [Z = O, NR3; R3 = H, OH, alkyl, haloalkyl, OSO2R4; R4 = alkyl, haloalkyl, cycloalkyl, camphoryl], and CH2:C(R)(AlCOOA2(Z2)l(A3R')m) [R = H, methyl; A1 = single bond, connection bond; A2 = single bond, alkylene, ether, ester; Z2 = alicyclic hydrocarbyl; l = 0, 1; A3 = single bond, alkylene, ether, ester; R' = CN; m = 1-3]. The photoresist compn. is suitable for microphotofabrication processes.

IT **470482-89-4**

(photoacid generator; pos.-working chem. amplification type photoresist compn. showing improved pattern profile and line edge roughness)

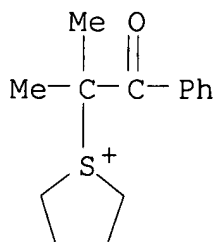
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluorobutanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

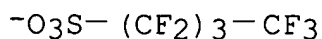
CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



IT **470482-89-4**

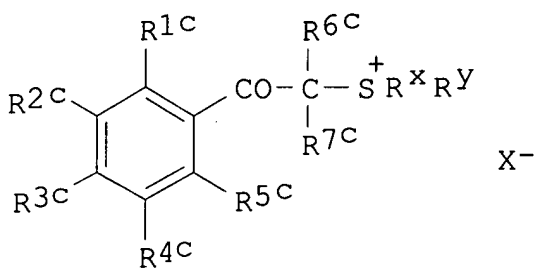
(photoacid generator; pos.-working chem. amplification type photoresist compn. showing improved pattern profile and line edge roughness)



L11 ANSWER 52 OF 65 ZCA COPYRIGHT 2005 ACS on STN

139:388487 Positive-working light-sensitive photoresist composition containing specific photoacid generator and specific resin. Sato, Kenichiro; Kodama, Kunihiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003330172 A2 20031419, 70 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-138809 20020514.

GI



AB The title compn. contains a photoacid generator and a resin increasing in an alkali developer by reacting with an acid, wherein the photoacid generator has general structure I (R1c-5c = H, alkyl, alkoxy, etc.; R6c-7c = H, alkyl, aryl; Rx, Ry = alkyl, 2-oxoalkyl, alkoxy carbonylmethyl, ally, vinyl; X- = sulfonate, carboxylate, sulfonylamide anion) or (R1d) (R2d) (R3d)S+ X- (R1d-3d = alkyl, 2-oxoalkyl; X- = anion) and wherein the resin has repeating unit II (R1-4 = H, cyano, hydrocarbon, etc.; m = 0, 1). The compn. is suitable use with ArF excimer laser and SOG substrates and provides photoresists of the good profile.

IT **470482-89-4 477327-88-1**

(pos.-working light-sensitive photoresist compn.)

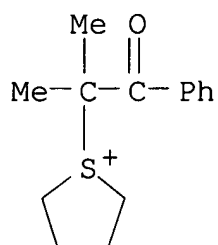
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluorobutanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

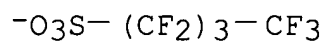
CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



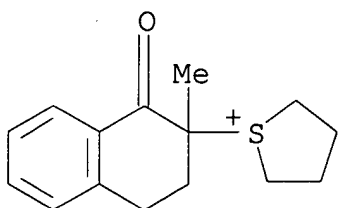
RN 477327-88-1 ZCA

CN Thiophenium, tetrahydro-1-(1,2,3,4-tetrahydro-2-methyl-1-oxo-2-naphthalenyl)-, salt with trifluoromethanesulfonic acid (1:1) (9CI)  
(CA INDEX NAME)

CM 1

CRN 477327-87-0

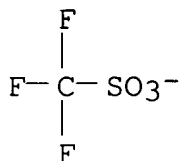
CMF C15 H19 O S



CM 2

CRN 37181-39-8

CMF C F3 O3 S

IT **470482-89-4 477327-88-1**

(pos.-working light-sensitive photoresist compn.)

L11 ANSWER 53 OF 65 ZCA COPYRIGHT 2005 ACS on STN

139:343475 Positive-working resist composition containing resin having alicyclic acid decomposable group in repeating unit. Sato,

Kenichiro; Kawabe, Yasumasa (Fuji Photo Film Co., Ltd., Japan).

Jpn. Kokai Tokkyo Koho JP 2003302763 A2 20031024, 50 pp.

(Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-109500 20020411.

AB The pos.-working resist compn. used in a far-UV region comprises (A) a photoacid, (B) a resin having an alicyclic acid decomposable group in the repeating unit, and (C) an alc. compd. having a C1-15 alicyclic hydrocarbon group and an alc. OH.

IT **470482-89-4**

(photoacid; pos.-working resist compn. contg. resin having alicyclic acid decomposable group in repeating unit)

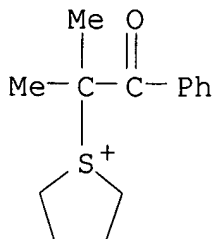
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$-\text{O}_3\text{S}-(\text{CF}_2)_3-\text{CF}_3$

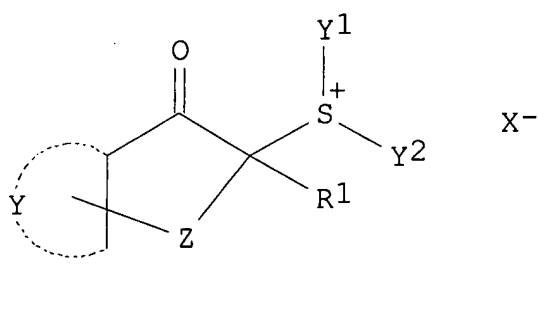
IT **470482-89-4**

(photoacid; pos.-working resist compn. contg. resin having alicyclic acid decomposable group in repeating unit)

L11 ANSWER 54 OF 65 ZCA COPYRIGHT 2005 ACS on STN

139:330330 Chemically amplified photoresist compositions with high sensitivity and resolution. Kodama, Kunihiro ((Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003302754 A2 20031024, 63 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-110738 20020412.

GI



AB The resist compns., useful for excimer laser development, contain photoacid generators I (R1 = H, alkyl, aryl, cyano; Y1, Y2 = alkyl, aryl, aralkyl, heteroring; Y = condensed arom. group, heteroring; Z = single bond, divalent linking group; X- = nonnucleophilic anion).

IT **615278-17-6**

(photoacid generator; sulfonium-based photoacid generators for excimer laser-sensitive photoresists with high sensitivity and resoln.)

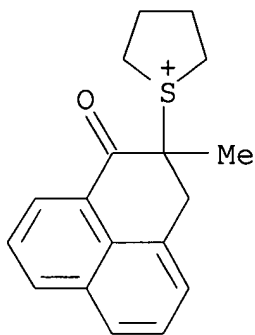
RN 615278-17-6 ZCA

CN Thiophenium, 1-(2,3-dihydro-2-methyl-1-oxo-1H-phenalen-2-yl)tetrahydro-, salt with 3,5-bis(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 615278-16-5

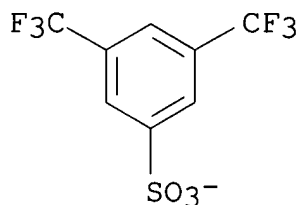
CMF C18 H19 O S



CM 2

CRN 213740-84-2

CMF C8 H3 F6 O3 S

IT **615278-17-6**

(photoacid generator; sulfonium-based photoacid generators for excimer laser-sensitive photoresists with high sensitivity and resoln.)

L11 ANSWER 55 OF 65 ZCA COPYRIGHT 2005 ACS on STN

139:314532 Radiation sensitive composition and compound. Kodama, Kunihiro (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 1353225 A2 20061015, 99 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK. (English). CODEN: EPXXDW. APPLICATION: EP 2003-7989 20030410. PRIORITY: JP 2002-108104 20020410; JP 2002-240661 20020821.

AB The present invention relates to a stimulation sensitive compn. used for a semiconductor prodn. process such as IC, a liq. crystal, the prodn. of a circuit substrate such as a thermal head, further, other photo application system, lithog. printing, an acid curing compn., a radical curing compn. and the like. The present invention relates to a stimulation sensitive compn. comprising: (A) a compd. represented by:  $\text{ArC(=O)OR}_6\text{R}_7\text{S}^+\text{YlY}_2\text{X}^-$  (Ar = aryl or arom. group contg. a hetero atom; R6 = H, cyano, alkyl, aryl group; R7 =

monovalent org. group; Y1,2 = alkyl, aryl, aralkyl, etc.; X- = non-nucleophilic anion) which is capable of generating an acid or a radical by stimulation from the external. (B) a resin.

IT **470482-89-4P**

(acid generating agent; radiation sensitive resist compn. for semiconductor prodn. process contg.)

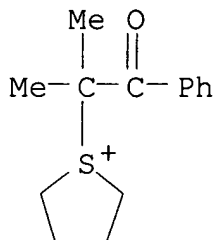
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

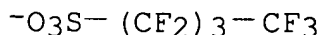
CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



IT **610301-08-1 610301-09-2 610301-10-5**

**610301-26-3 610301-30-9 610301-36-5**

**610301-38-7 610301-40-1 610301-42-3**

**610301-44-5 610301-46-7**

(acid generating agent; radiation sensitive resist compn. for semiconductor prodn. process contg.)

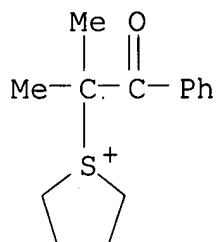
RN 610301-08-1 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

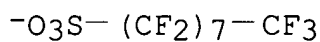
CMF C14 H19 O S



CM 2

CRN 45298-90-6

CMF C8 F17 O3 S



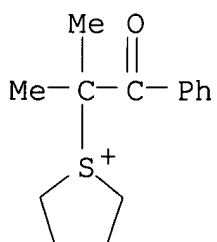
RN 610301-09-2 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt  
with 3,5-bis(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA  
INDEX NAME)

CM 1

CRN 470482-88-3

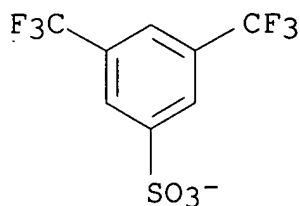
CMF C14 H19 O S



CM 2

CRN 213740-84-2

CMF C8 H3 F6 O3 S



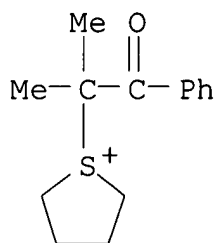
RN 610301-10-5 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt  
with 7,7-dimethyl-2-oxobicyclo[2.2.1]heptane-1-methanesulfonic acid  
(1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

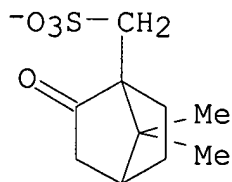
CMF C14 H19 O S



CM 2

CRN 55077-28-6

CMF C10 H15 O4 S



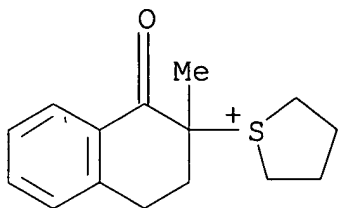
RN 610301-26-3 ZCA

CN Thiophenium, tetrahydro-1-(1,2,3,4-tetrahydro-2-methyl-1-oxo-2-  
naphthalenyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-  
butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

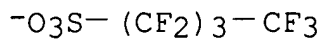


CRN 477327-87-0  
CMF C15 H19 O S



CM 2

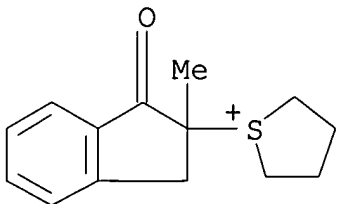
CRN 45187-15-3  
CMF C4 F9 O3 S



RN 610301-30-9 ZCA  
CN Thiophenium, 1-(2,3-dihydro-2-methyl-1-oxo-1H-inden-2-yl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

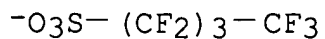
CM 1

CRN 610301-29-6  
CMF C14 H17 O S



CM 2

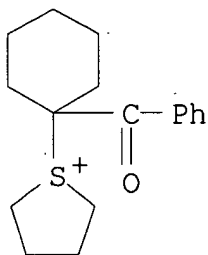
CRN 45187-15-3  
CMF C4 F9 O3 S



RN 610301-36-5 ZCA  
CN Thiophenium, 1-(1-benzoylcyclohexyl)tetrahydro-, salt with  
1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA  
INDEX NAME)

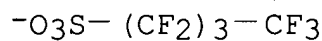
CM 1

CRN 610301-35-4  
CMF C17 H23 O S



CM 2

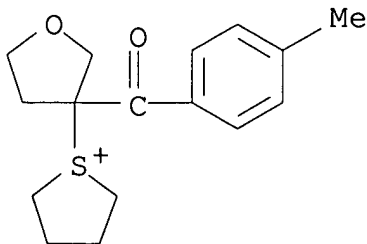
CRN 45187-15-3  
CMF C4 F9 O3 S



RN 610301-38-7 ZCA  
CN Thiophenium, tetrahydro-1-[tetrahydro-3-(4-methylbenzoyl)-3-furanyl]-  
, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1)  
(9CI) (CA INDEX NAME)

CM 1

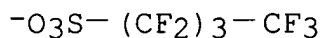
CRN 610301-37-6  
CMF C16 H21 O2 S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



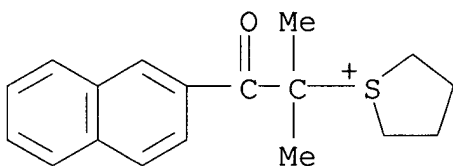
RN 610301-40-1 ZCA

CN Thiophenium, 1-[1,1-dimethyl-2-(2-naphthalenyl)-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 610301-39-8

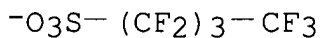
CMF C18 H21 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



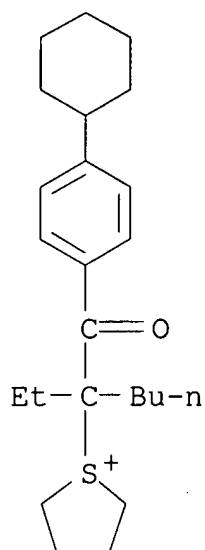
RN 610301-42-3 ZCA

CN Thiophenium, 1-[1-(4-cyclohexylbenzoyl)-1-ethylpentyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 610301-41-2

CMF C24 H37 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

-O<sub>3</sub>S- (CF<sub>2</sub>)<sub>3</sub>-CF<sub>3</sub>

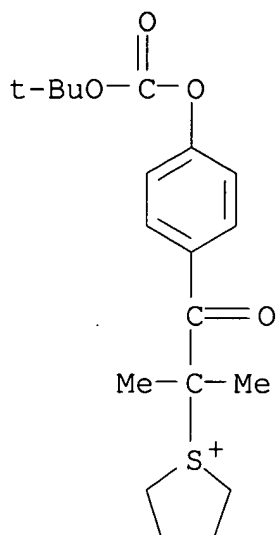
RN 610301-44-5 ZCA

CN Thiophenium, 1-[2-[4-[[ (1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1,1-dimethyl-2-oxoethyl]tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 610301-43-4

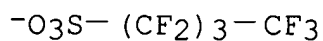
CMF C19 H27 O4 S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



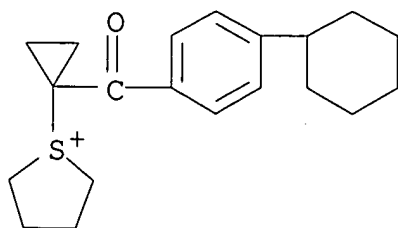
RN 610301-46-7 ZCA

CN Thiophenium, 1-[1-(4-cyclohexylbenzoyl)cyclopropyl]tetrahydro-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

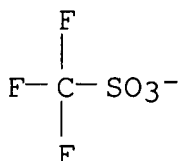
CRN 610301-45-6

CMF C20 H27 O S



CM 2

CRN 37181-39-8  
CMF C F3 O3 S



IT **470482-89-4P**

(acid generating agent; radiation sensitive resist compn. for semiconductor prodn. process contg.)

IT **610301-08-1 610301-09-2 610301-10-5**

**610301-26-3 610301-30-9 610301-36-5**

**610301-38-7 610301-40-1 610301-42-3**

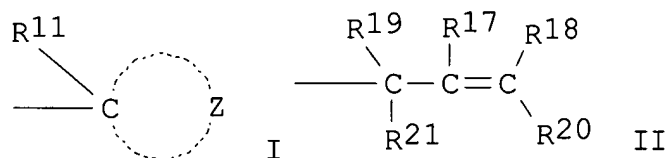
**610301-44-5 610301-46-7**

(acid generating agent; radiation sensitive resist compn. for semiconductor prodn. process contg.)

L11 ANSWER 56 OF 65 ZCA COPYRIGHT 2005 ACS on STN

139:188312 Positive DUV resist compositions with suppressed roughness of etched surfaces and good dissoln. and defocus latitude in contact hole pattern formation. Sato, Kenichiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003233188 A2 20030822, 51 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-32449 20020208.

GI



AB The pos. resist compns. contain (A) resins whose dissoln. rate toward alkali developers increase with acids, bearing 2 types of specific repeating units bearing alicyclic groups and (B) compds. which generate acids by irradiation of actinic ray or radiation. Resins A contain (A1) repeating units represented by  $\text{CH}_2\text{CR}_1\text{ACO}_2\text{ALG}$  [ $\text{R}_1 = \text{H}, \text{Me}$ ;  $\text{A} = \text{single bond, linkage}$ ;  $\text{ALG} = \text{I, CR}_{12}\text{R}_{13}\text{R}_{14}, \text{CH}(\text{OR}_{15})\text{R}_{16}, \text{II, and CR}_{22}\text{R}_{25}\text{CHR}_{23}\text{COR}_{24}$ ;  $\text{R}_{11} = \text{Me, Et, n-Pr, i-Pr, n-Bu, sec-Bu}$ ;  $\text{Z} = \text{atom. group necessary for forming alicyclic hydrocarbyl (ACHC)}$ ]

together with C; R12-R16 = C1-4 alkyl, ACHC; .gtoreq.1 of R12-R14 and R15 and/or R16 show ACHC; R17-R21 = H, C1-4 alkyl, alkycyclic hydrocarbyl; .gtoreq.1 of R17-R21 show ACHC; R19 and/or R21 = C1-4 alkyl, ACHC; R22-R25 = C1-4 alkyl, alicyclic hydrocarbyl; .gtoreq.1 of R22-R25 = ACHC; R23 and R24 may be bonded to each other and form ring] and (A2) repeating units represented by CH<sub>2</sub>CR<sub>2</sub>CO<sub>2</sub>A<sub>1</sub>R<sub>3</sub>A<sub>2</sub>CO<sub>2</sub>R<sub>4</sub> (R<sub>2</sub> = H, alkyl; R<sub>3</sub> = ACHC; R<sub>4</sub> = chain-type tertiary alkyl, 1-alkoxyalkyl, tetrahydropyranyl, tetrahydrofuranyl; A<sub>1</sub>, A<sub>2</sub> = single bond, alkylene, ether, carbonyl, ester).

IT **470482-89-4**

(photoacid generator; pos. DUV resist compns. with suppressed roughness of etched surfaces and good dissoln. and defocus latitude in contact hole pattern formation)

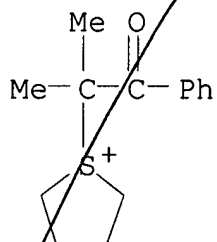
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluorobutanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

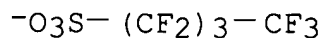
CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



IT **470482-89-4**

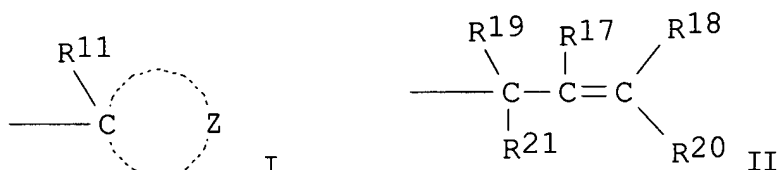
(photoacid generator; pos. DUV resist compns. with suppressed roughness of etched surfaces and good dissoln. and defocus latitude in contact hole pattern formation)

L11 ANSWER 57 OF 65 ZCA COPYRIGHT 2005 ACS on STN

139:188311 Positive DUV resist compositions with suppressed roughness of

etched surfaces and good dissolution and defocus latitude in contact hole pattern formation. Sato, Kenichiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003233187 A2 20030822, 54 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-32448 20020208.

GI



AB The pos. resist compns. contain (A) 2 resins contg. specific repeating units bearing alicyclic groups and (B) compds. which generate acids by irradiation of actinic ray or radiation. A comprise (A1) resins bearing repeating units represented by CH<sub>2</sub>CR<sub>1</sub>ACO<sub>2</sub>ALG [R<sub>1</sub> = H, Me; A = single bond, linkage; ALG = I, CR<sub>12</sub>R<sub>13</sub>R<sub>14</sub>, CH(OR<sub>15</sub>)R<sub>16</sub>, II, and CR<sub>22</sub>R<sub>25</sub>CHR<sub>23</sub>COR<sub>24</sub>; R<sub>11</sub> = Me, Et, n-Pr, i-Pr, n-Bu, sec-Bu; Z = atom. group necessary for forming alicyclic hydrocarbyl (ACHC) together with C; R<sub>12</sub>-R<sub>16</sub> = C1-4 alkyl, ACHC; .gtoreq.1 of R<sub>12</sub>-R<sub>14</sub> and R<sub>15</sub> and/or R<sub>16</sub> show ACHC; R<sub>17</sub>-R<sub>21</sub> = H, C1-4 alkyl, alkyclic hydrocarbyl; .gtoreq.1 of R<sub>17</sub>-R<sub>21</sub> show ACHC; R<sub>19</sub> and/or R<sub>21</sub> = C1-4 alkyl, ACHC; R<sub>22</sub>-R<sub>25</sub> = C1-4 alkyl, alicyclic hydrocarbyl; .gtoreq.1 of R<sub>22</sub>-R<sub>25</sub> = ACHC; R<sub>23</sub> and R<sub>24</sub> may be bonded to each other and form ring] and (A2) resins bearing repeating units represented by CH<sub>2</sub>CR<sub>2</sub>CO<sub>2</sub>A<sub>1</sub>R<sub>3</sub>A<sub>2</sub>CO<sub>2</sub>R<sub>4</sub> (R<sub>2</sub> = H, alkyl; R<sub>3</sub> = ACHC; R<sub>4</sub> = chain-type tertiary alkyl, 1-alkoxyalkyl, tetrahydropyranyl, tetrahydrofuranlyl; A<sub>1</sub>, A<sub>2</sub> = single bond, alkylene, ether, carbonyl, ester).

IT **470482-89-4**

(photoacid generator; pos. DUV resist compns. with suppressed roughness of etched surfaces and good dissoln. and defocus latitude in contact hole pattern formation)

RN 470482-89-4 ZCA

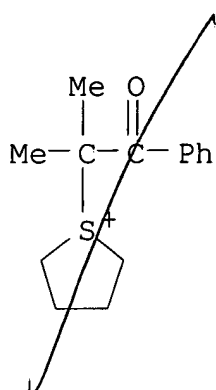
CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluorobutanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S





CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

 $\text{-O}_3\text{S- (CF}_2\text{)}_3\text{-CF}_3$ IT **470482-89-4**

(photoacid generator; pos. DUV resist compns. with suppressed roughness of etched surfaces and good dissoln. and defocus latitude in contact hole pattern formation)

L11 ANSWER 58 OF 65 ZCA COPYRIGHT 2005 ACS on STN

139:171272 Positive-working photoresist composition containing specific resin. Sato, Kenichiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003223001 A2 20030808, 50 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-24050 20020131.

AB The title compn. contains a resin, which increases soly. rate in an alkali developer by reacting an acid and an actinic ray- or radiation-sensitive acid generator, wherein the resin has repeating unit  $[-\text{CH}_2-\text{C}(\text{R}_1)(-\text{A}-\text{COO}-\text{ALG})]$  (R1 = H, methyl; A = single bond, connecting group; ALG = alicyclic group,  $-\text{C}(\text{R}_{12})(\text{R}_{13})(\text{R}_{14})$ ,  $-\text{CH}(-\text{OR}_{15})(\text{R}_{16})$ , etc.; R12-16 = C1-4 alkyl, alicyclic group). The photoresist is suitable for exposure with ArF excimer laser and shows wide defocus latitude of independent line pattern.

IT **470482-89-4**

(acid generator in pos.-working photoresist compn.)

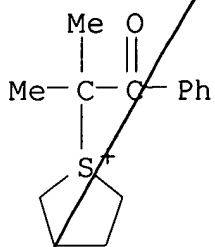
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluoronic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

 $\text{-O}_3\text{S- (CF}_2\text{)}_3\text{-CF}_3$ IT **470482-89-4**

(acid generator in pos.-working photoresist compn.)

L11 ANSWER 59 OF 65 ZCA COPYRIGHT 2005 ACS on STN

139:140960 Chemically amplified positive photoresists with good profiles. Nakao, Hajime; Kodama, Kunihiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003207886 A2 20030725, 82 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-3900 20020110.

AB The compns. comprise (A) compds. generating arom. sulfonic acids contg. F by irradiation, (B) alkanesulfonic acid onium salts and/or carboxylic acid onium salts having no F on .alpha.-position, and (C) resins having mono- or poly-alicyclic hydrocarbon structures, which increase their alkali soly. by acid decompn.

IT **565469-40-1**

(photoacid generator; chem. amplified pos. photoresists with good profiles)

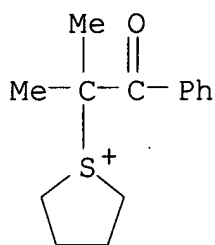
RN 565469-40-1 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 2-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

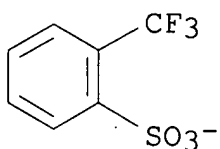
CMF C14 H19 O S



CM 2

CRN 229325-97-7

CMF C7 H4 F3 O3 S

IT **565469-40-1**

(photoacid generator; chem. amplified pos. photoresists with good profiles)

L11 ANSWER 60 OF 65 ZCA COPYRIGHT 2005 ACS on STN

139:140959 Chemically amplified positive photoresist compositions with good developability and post-exposure-delay stability. Nakao, Hajime; Kawabe, Yasumasa; Fujimori, Toru (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003207885 A2 20030725, 76 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-3899 20020110.

AB The compns. comprise (A) compds. generating arom. sulfonic acids contg. F by irradiation, (B) resins having mono- or poly-alicyclic hydrocarbon structures, which increase their alkali soly. by acid decompn., and (C) compds. having .gtoreq.3 OH or substituted OH and .gtoreq.1 ring structures.

IT **565469-40-1**

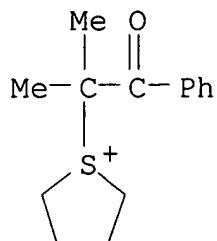
(photoacid generator; chem. amplified pos. photoresists with good developability and post-exposure-delay stability)

RN 565469-40-1 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 2-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

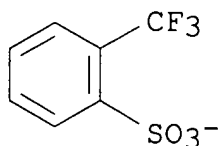
CM 1

CRN 470482-88-3  
CMF C14 H19 O S



CM 2

CRN 229325-97-7  
CMF C7 H4 F3 O3 S



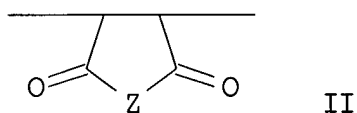
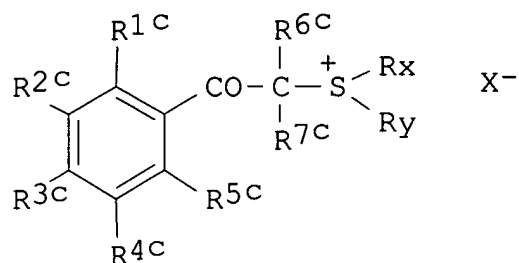
IT **565469-40-1**

(photoacid generator; chem. amplified pos. photoresists with good developability and post-exposure-delay stability)

L11 ANSWER 61 OF 65 ZCA COPYRIGHT 2005 ACS on STN

139:140958 Positively-working photoresist composition containing acid-generating sulfonium compound. Sato, Kenichiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003207884 A2 20030725, 66 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-3702 20020110.

GI



AB The photoresist compn. contains a sulfonium compd. I and/or  $R1cR2cR3cS^+ X^-$  [ $R1c-R5c = H, \text{ alkyl, alkoxy, halogen; } R6c, R7c = H, \text{ alkyl, aryl; } Rx, Ry = \text{ alkyl, 2-oxoalkyl, alkoxy carbonylmethyl, allyl, vinyl; } 2 \text{ of } R1c-R5c \text{ or } Rx-Ry \text{ may form rings; } R1b-R3b = (2\text{-oxo})\text{alkyl, which may form rings; } X = \text{ anion}]$  and a resin having repeating units  $CH(R1a)CH(OR2a)$  and cyclic unit II [ $R1a = H, \text{ (substituted) hydrocarbyl; } R2a = \text{ (substituted) hydrocarbyl; } R1a-R2a \text{ may form a ring; } Z = O, N(R3a); R3a = H, OH, \text{ alkyl, haloalkyl, } OSO_2R4a; R4a = \text{ alkyl, haloalkyl, cycloalkyl, camphor residue}]$ . The sulfonium compd. generates an acid under radiation and the resin is decompd. by an acid and shows increase of soly. in a liq. alk. developer. The compn. is useful for microphotofabrication under far UV irradiation in manuf. of electronic devices, etc.

IT **470482-89-4**

(pos.-working photoresist compn. contg. acid-generating sulfonium compd. for microphotofabrication under far UV)

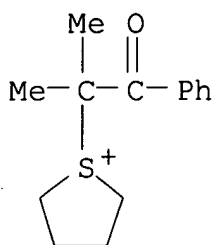
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluorobutanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

-O<sub>3</sub>S- (CF<sub>2</sub>)<sub>3</sub>-CF<sub>3</sub>IT **470482-89-4**

(pos.-working photoresist compn. contg. acid-generating sulfonium compd. for microphotofabrication under far UV)

L11 ANSWER 62 OF 65 ZCA COPYRIGHT 2005 ACS on STN

138:9656 Positive photosensitive composition. Kodama, Kunihiro; Sato, Kenichiro; Fujimori, Toru (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 1260864 A1 20021127, 145 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR. (English). CODEN: EPXXDW. APPLICATION: EP 2002-11516 20020522. PRIORITY: JP 2001-152587 20010522; JP 2001-155897 20010524; JP 2001-159060 20010528.

AB A pos. photosensitive compn. comprises (A) a specific acid generator that generates an acid upon irradiation of an actinic ray or radiation, and (B) a resin that has a monocyclic or polycyclic alicyclic hydrocarbon structure and is decomposed by the action of an acid to increase solubility in an alkali developing solution.

IT **477327-88-1P**

(acid generator; pos photoresist compn. contg.)

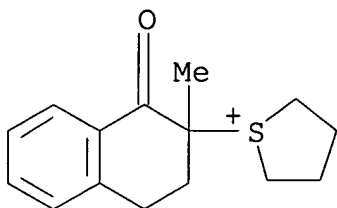
RN 477327-88-1 ZCA

CN Thiophenium, tetrahydro-1-(1,2,3,4-tetrahydro-2-methyl-1-oxo-2-naphthalenyl)-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 477327-87-0

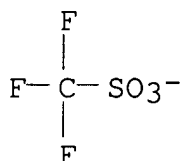
CMF C15 H19 O S



CM 2

CRN 37181-39-8

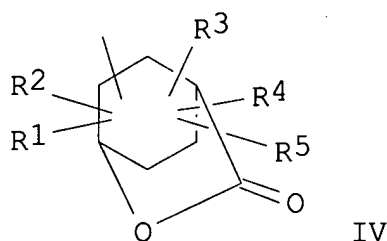
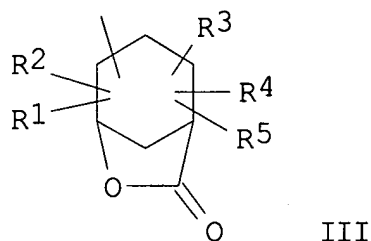
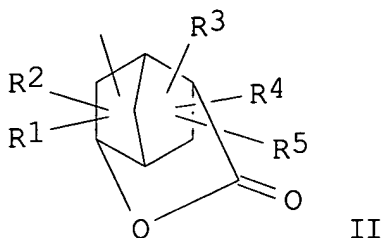
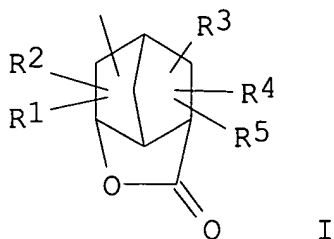
CMF C F3 O3 S

IT **477327-88-1P**

(acid generator; pos photoresist compn. contg.)

L11 ANSWER 63 OF 65 ZCA COPYRIGHT 2005 ACS on STN  
137:317919 Positive photoresist compositions containing  
alkali-developable resins bearing lactone structures. Fujimori,  
Toru; Kodama, Kunihiro; Sato, Kenichiro; Aogo, Toshiaki (Fuji Photo  
Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002303980 A2  
20021018, 58 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
2001-108627 20010406.

GI



AB The pos. photoresist compns. which give patterns with good profiles by development using ArF excimer laser contain (A) compds. which generate acids by actinic light or radiation and involve (A1) sulfonic acid salts of sulfoniums and (A2) N-hydroxyimides sulfonates or disulfodiazomethanes and (B) resins which decomp. by acids and increase soly. to alkalis, contg. repeating units bearing lactone structures represented by generic formula I-IV [R1-R5 = H, (substituted) alkyl, cycloalkyl, alkenyl; 2 of R1-R5 may be bonded to each other and form ring]. The resins B may have alicyclic hydrocarbon group-contg. repeating units bearing protected alkali-sol. groups, preferably adamantyl acrylate derivs. The compns. may contain (C) acid diffusion retarders and (D) F- and/or silicone-based surfactants.

IT **470482-89-4**

(acid generator; pos. deep UV resist compns. contg.

alkali-developable resins bearing lactone structures and acid generators)

RN 470482-89-4 ZCA

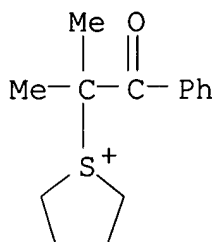
CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluorobutanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3



CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

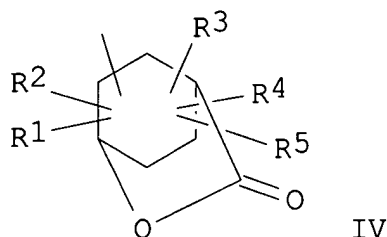
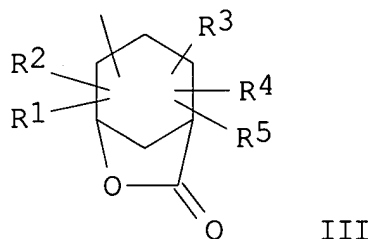
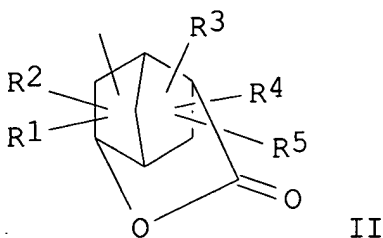
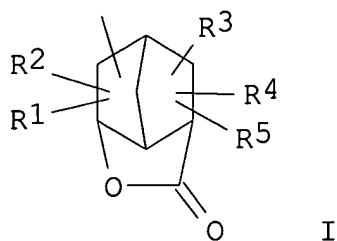
 $\text{-O}_3\text{S- (CF}_2\text{)}_3\text{-CF}_3$ IT **470482-89-4**

acid generator; pos. deep UV resist compns. contg.  
alkali-developable resins bearing lactone structures and acid  
generators)

L11 ANSWER 64 OF 65 ZCA COPYRIGHT 2005 ACS on STN

137: 17918 Positive photoresist compositions containing  
alkali-developable resins bearing lactone structures. Kodama,  
Kunihiko; Aogo, Toshiaki; Sato, Kenichiro; Fujimori, Toru (Fuji  
Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002303979  
A2 20021018, 64 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
2001-107547 20010405.

GI



AB The pos. photoresist compns. for development using ArF excimer laser contain (A) compds. which generate acids by actinic light or radiation and involve sulfonium salts and oxime sulfonates and (B) resins which decomp. by acids and increase soly. to alkalis, contg. repeating units bearing lactone structures represented by generic formula I-IV [R1-R5 = H, (substituted) alkyl, cycloalkyl, alkenyl; 2 of R1-R5 may be bonded to each other and form ring]. The resins B may have alicyclic hydrocarbon group-contg. repeating units bearing protected alkali-sol. groups, preferably adamantyl acrylate derivs. The compns. may contain (C) acid diffusion retarders. The photoresist compns. have high sensitivity, high resoln., and high adhesion strength to substrates and offers patterns with good profiles and smoother line edges.

IT **470482-89-4**

(acid generator; pos. deep UV resist compns. contg.

alkali-developable resins bearing lactone structures and acid generators)

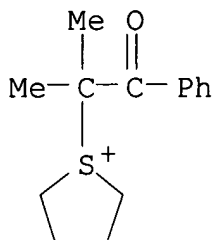
RN 470482-89-4 ZCA

CN Thiophenium, 1-(1,1-dimethyl-2-oxo-2-phenylethyl)tetrahydro-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluorobutanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 470482-88-3

CMF C14 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

 $-\text{O}_3\text{S}-(\text{CF}_2)_3-\text{CF}_3$ IT **470482-89-4**

(acid generator; pos. deep UV resist compns. contg.  
alkali-developable resins bearing lactone structures and acid  
generators)

L11 ANSWER 65 OF 65 ZCA COPYRIGHT 2005 ACS on STN

71:123826 Cyclopropylsulfonium salts by reaction of sulfonium ylides and dimethylvinylsulfonium bromide. Schmidt, Gerhard; Gosselck, Juergen (Univ. Giessen, Giessen, Fed. Rep. Ger.). Tetrahedron Letters (39), 3445-8 (German) 1969. CODEN: TELEAY. ISSN: 0040-4039.

GI For diagram(s), see printed CA Issue.

AB Treatment of  $\text{H}_2\text{C}:\text{CHS}+\text{Me}_2\text{Br}^-$  (I) with an equimolar amt. of carbonyl stabilized  $\text{RCOC}=\text{HS}+\text{Me}$  (II, R = OEt, Ph, p-BrC<sub>6</sub>H<sub>4</sub>, p-O<sub>2</sub>N-C<sub>6</sub>H<sub>4</sub>) in abs. alc. and cleavage of  $\text{Me}_2\text{S}$  from the exothermic reaction gave the cyclopropylsulfonium salts (IIIa-d), isolated as picrylsulfonates (IIIa, m. 138-41.degree. (77% yield); IIIb, m. 208-9.degree., 33%; IIIc, m. 209.degree., 73%; IIId, m. 210.degree., 58%) or as tetraphenylborate (IIIb, m. 199-201.degree., 31%). The reaction proceeded by intramol. reyclidation through the intermediate states  $\text{RCOCH}(\text{S}+\text{Me}_2)\text{CH}_2\text{C}-\text{HS}+\text{Me}_2\text{Br}^-$  and  $\text{RCOC}-(\text{S}+\text{Me}_2)\text{CH}_2\text{CH}_2\text{S}+\text{Me}_2\text{Br}^-$ . Treatment of  $\text{RCOCH}_2\text{Br}$  with thiophane gave the sulfonium bromides (IV, R = OEt, Ph, p-BrC<sub>6</sub>H<sub>4</sub>) (IVa-c). IVa, m. 122-4.degree., treated with NaOH yielded 65% yield (V, R = OEt) (Va), n<sub>D</sub> 20 1.5426. Similarly were prepd. in 80% yield Vb, m. 82-5.degree., and a viscous oily Vc. Va-c treated with I in abs. alc. split off  $\text{Me}_2\text{S}$  and yielded the bromides (VIa-c) characterized as VIa tetraphenylborate, m. 135-40.degree. (yield 52%); VIb picrylsulfonate, m. 202.degree. (yield 68%); VIc picrylsulfonate, m.

211.degree. (yield 73%); Vlc bromide, m. 146.degree.; Vlc iodide, m. 153-6.degree.. IIIa in abs. alc. treated with I several days and the mixt. filtered from pptd. cryst. Me3SBr yielded 14.5% 1-(methylthio)-1-carbethoxycyclopropane, b10 77-81.degree., n20D 1.4522.

IT **25709-57-3P 25709-59-5P 25709-60-8P**  
**26088-48-2P**

(prepn. of)

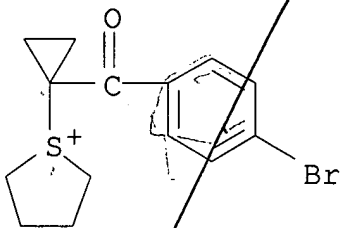
RN 25709-57-3 ZCA

CN Thiophenium, 1-[1-(p-bromobenzoyl)cyclopropyl]tetrahydro-,  
 2,4,6-trinitrobenzenesulfonate (8CI) (CA INDEX NAME)

CM 1

CRN 46759-47-1

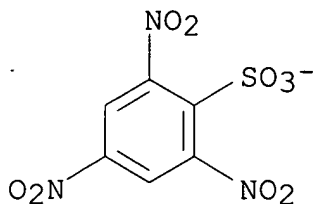
CMF C14 H16 Br O S



CM 2

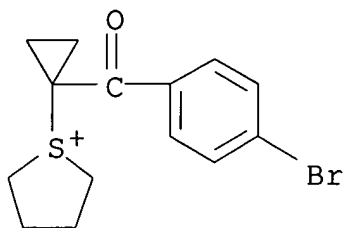
CRN 16655-63-3

CMF C6 H2 N3 O9 S



RN 25709-59-5 ZCA

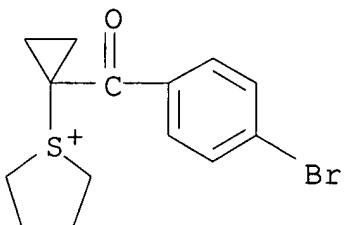
CN Thiophenium, 1-[1-(4-bromobenzoyl)cyclopropyl]tetrahydro-, bromide  
 (9CI) (CA INDEX NAME)



● Br<sup>-</sup>

RN 25709-60-8 ZCA

CN Thiophenium, 1-[1-(4-bromobenzoyl)cyclopropyl]tetrahydro-, iodide  
(9CI) (CA INDEX NAME)



● I<sup>-</sup>

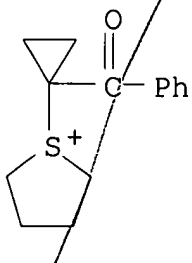
RN 26088-48-2 ZCA

CN Thiophenium, 1-(1-benzoylcyclopropyl)tetrahydro-, salt with  
2,4,6-trinitrobenzenesulfonic acid (1:1) (8CI) (CA INDEX NAME)

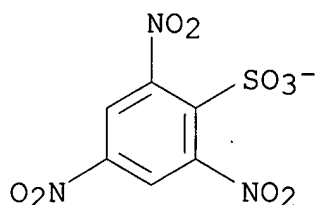
CM 1

CRN 46476-41-9

CMF C14 H17 O S



CM 2

CRN 16655-63-3  
CMF C6 H2 N3 O9 SIT **25709-57-3P 25709-59-5P 25709-60-8P**  
**26088-48-2P**  
(prepn. of)

=&gt; d his 115-

L15 FILE 'REGISTRY' ENTERED AT 15:39:06 ON 26 MAY 2005  
45 S L5 NOT L9L16 FILE 'ZCA' ENTERED AT 15:44:30 ON 26 MAY 2005  
14 S L15L17 FILE 'CAOLD' ENTERED AT 15:44:36 ON 26 MAY 2005  
0 S L15

=&gt; d 116 1-14 cbib abs hitstr hitrn

L16 ANSWER 1 OF 14 ZCA COPYRIGHT 2005 ACS on STN  
142:186548 Positive resist composition. Inabe, Haruki; Sasaki, Tomoya  
(Fuji Photo Film Co., Ltd., Japan). U.S. Pat. Appl. Publ. US  
2005026074 A1 20050203, 57 pp. (English). CODEN: USXXCO.  
APPLICATION: US 2004-897122 20040723. PRIORITY: JP 2003-280237  
20030725.AB A pos. resist compn. comprises (A) a resin contg. at least one group  
that is decompd. by the action of an acid to generate an alkali-sol.  
group and (B) at least two compds. selected from (B1) a compd. that  
generates an aliph. or arom. sulfonic acid substituted with at least  
one fluorine atom, (B2) a compd. that generates an aliph. or arom.  
sulfonic acid that does not contain a fluorine atom, (B3) a compd.

that generates an aliph. or arom. carboxylic acid substituted with at least one fluorine atom and (B4) a compd. that generates an aliph. or arom. carboxylic acid that does not contain a fluorine atom, as (B) a compd. that generates an acid upon irradiation of an actinic ray or radiation, wherein the group that is decomposed by the action of an acid contained in the resin.

IT **835654-51-8**

(acid generator for pos. resist compn.)

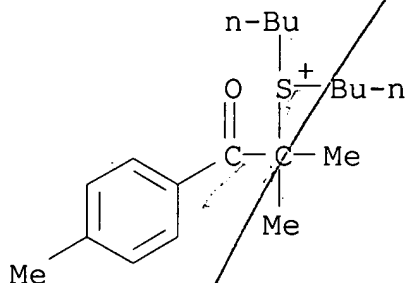
RN 835654-51-8 ZCA

CN Sulfonium, dibutyl[1,1-dimethyl-2-(4-methylphenyl)-2-oxoethyl]-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 835654-50-7

CMF C19 H31 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

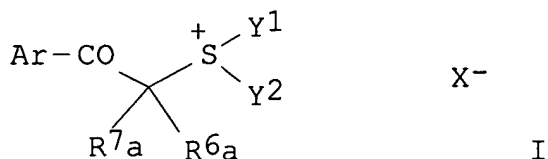
IT **835654-51-8**

(acid generator for pos. resist compn.)

L16 ANSWER 2 OF 14 ZCA COPYRIGHT 2005 ACS on STN

141:358070 Positive-working chemically amplified photoresist composition. Nishiyama, Fumiyuki; Fujimori, Toru; Kodama, Kunihiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004287195 A2 20041014, 70 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-80679 20030324.

GI



AB The title compn. contains acid-sensitive alkali-solubilizable resins and a photoacid generator, wherein the resins include a resin having unit  $-\text{O}-\text{C}(\text{H})(\text{CH}_3)-\text{O}-[-\text{C}(\text{R}_1)(\text{R}_2)]_m-\text{Z}_1$  ( $\text{R}_1-\text{R}_2 = \text{H}$ , alkyl;  $m = \text{integer } 1-20$ ;  $\text{Z}_1 = \text{no definition provided}$ ), and/or a resin having unit  $-\text{O}-\text{C}(\text{H})(\text{CH}_3)-\text{O}-\text{R}_4$  ( $\text{R}_4 = \text{alkyl}$ ), and a resin having unit  $-\text{O}-\text{C}(\text{R}_5)(\text{R}_6)-\text{O}-\text{X}-[-\text{Y}]_l-\text{Z}_2$  ( $\text{R}_5-\text{R}_6 = \text{H}$ , alkyl;  $\text{X} = \text{alkylene}$ ;  $\text{Y} = 2\text{-valent connecting group}$ ;  $\text{Z}_2 = \text{heterocyclic ring}$ ;  $l = 0, 1$ ) and wherein the photoacid generator has general structure I ( $\text{Ar} = \text{aryl}$ , arom. group with hetero atom;  $\text{R}^6\text{a} = \text{H}$ , CN, alkyl, aryl;  $\text{R}^7\text{a} = \text{alkyl}$ , aryl;  $\text{Y}^1-\text{Y}^2 = \text{alkyl}$ , aryl, aralkyl, arom. group with hetero atom;  $\text{X}^- = \text{non-nucleophilic anion}$ ). The compn. provides pattern of precise line width on a high reflective rough-surface substrate.

IT **592544-87-1 774221-70-4**  
(pos.-working photoresist)

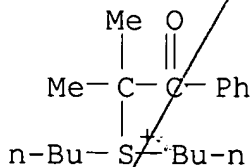
RN 592544-87-1 ZCA

CN Sulfonium, dibutyl(1,1-dimethyl-2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 592544-86-0

CMF C18 H29 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$-\text{O}_3\text{S}- (\text{CF}_2)_3-\text{CF}_3$



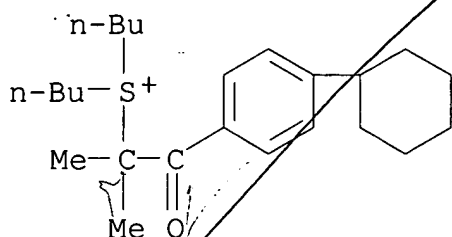
RN 774221-70-4 ZCA

CN Sulfonium, dibutyl[2-(4-cyclohexylphenyl)-1,1-dimethyl-2-oxoethyl]-,  
salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 774221-69-1

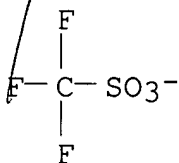
CMF C24 H39 O S



CM 2

CRN 37181-39-8

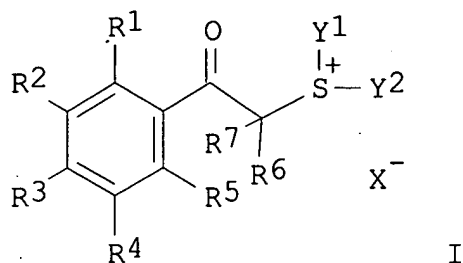
CMF C F3 O3 S

IT **592544-87-1 774221-70-4**  
(pos.-working photoresist)

L16 ANSWER 3 OF 14 ZCA COPYRIGHT 2005 ACS on STN

141:131279 Negative-working photoresist composition containing specific  
sulfonic acid-generator. Yasunami, Shoichiro; Shirakawa, Hiroshi;  
Takahashi, Omote (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai  
Tokkyo Koho JP 2004198724 A2 20040715, 66 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 2002-367008 20021218.

GI



AB The title compn. contains an acid-sensitive alkali-solubilizable polymer, a crosslinking agent for the polymer, an energy ray-sensitive sulfonic acid-generator, and an energy ray-sensitive carboxylic acid-generator, wherein the energy ray-sensitive sulfonic acid-generator has general structure I (R1-5 = H, nitro, alkyl, etc.; Y1-2 = alkyl, alkenyl, aryl; X- = org. sulfonic acid anion). The compn. provides photoresist of high sensitivity, high resolu., good pattern profile, and improved property dependence on pattern d. and is suitable for semiconductor device fabrication.

IT **721927-04-4**

(sulfonic acid generator in neg.-working photoresist compn.)

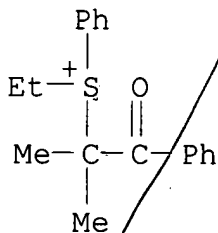
RN 721927-04-4 ZCA

CN Sulfonium, (1,1-dimethyl-2-oxo-2-phenylethyl)ethylphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 721927-03-3

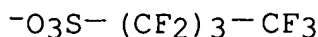
CMF C18 H21 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

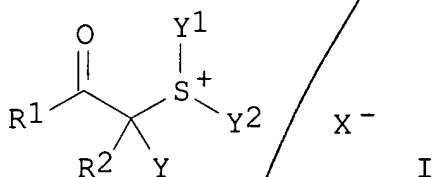
IT **721927-04-4**

(sulfonic acid generator in neg.-working photoresist compn.)

L16 ANSWER 4 OF 14 ZCA COPYRIGHT 2005 ACS on STN

140:329525 Photosensitive composition and acid generator. Kodama, Kunihiro (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 1406122 A2-20040407, 83 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK. (English). CODEN: EPXXDW. APPLICATION: EP 2003-21631 20030925. PRIORITY: JP 2002-279273 20020925.

GI



AB A photosensitive compn. comprises an acid generator of the formula I (R1 = alkyl; R2 = H, alkyl, aryl; Y = alkyl; Y1, Y2 = alkyl, aryl, aralkyl, hetero atom-contg. arom.; R1 and R2 may be bonded to each other to form a ring; R2 and Y may be bonded to each other to form a ring; Y1 and Y2 may be bonded to each other to form a ring; two or more structures of the general formula I may be bonded to each other at any position of R1, R2 or Y, or Y1 or Y2 via a connecting group; X = non-nucleophilic anion)., an alk. developer-sol. resin, an acid crosslinking agent, a basic compd., and a surfactant. The object of the present invention is to provide an acid generator that has a high transparency against rays of not longer than 220 nm, has an enhanced photodegrdn. ability as compared with conventionally known acid generators, thereby revealing high sensitivity, and providing a good resist profile. The photosensitive compn. of the present invention has excellent sensitivity and pattern profile.

IT **677351-34-7 677351-39-2 677351-41-6**  
**677351-62-1 677351-64-3**

(acid generator; photosensitive compn. and acid generator)

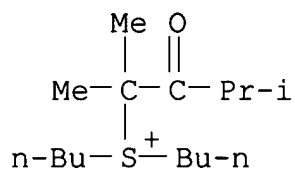
RN 677351-34-7 ZCA

CN Sulfonium, dibutyl(1,1,3-trimethyl-2-oxobutyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluorobutanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 677351-33-6

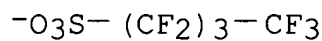
CMF C15 H31 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



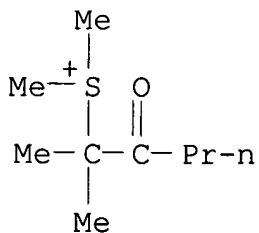
RN 677351-39-2 ZCA

CN Sulfonium, (1,1-dimethyl-2-oxopentyl)dimethyl-, salt with  
 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA  
 INDEX NAME)

CM 1

CRN 677351-38-1

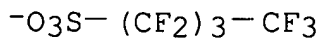
CMF C9 H19 O S



CM 2

CRN 45187-15-3

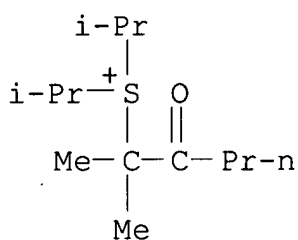
CMF C4 F9 O3 S



RN 677351-41-6 ZCA  
 CN Sulfonium, (1,1-dimethyl-2-oxopentyl)bis(1-methylethyl)-, salt with  
 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA  
 INDEX NAME)

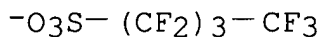
CM 1

CRN 677351-40-5  
 CMF C13 H27 O S



CM 2

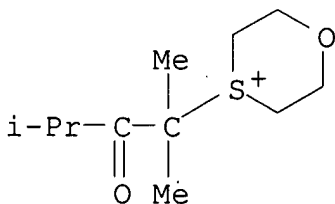
CRN 45187-15-3  
 CMF C4 F9 O3 S



RN 677351-62-1 ZCA  
 CN 1,4-Oxathianium, 4-(1,1,3-trimethyl-2-oxobutyl)-, salt with  
 3,5-bis(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX  
 NAME)

CM 1

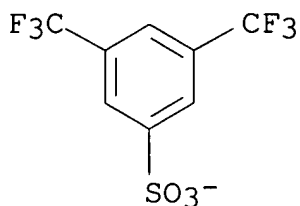
CRN 677351-61-0  
 CMF C11 H21 O2 S



CM 2

CRN 213740-84-2

CMF C8 H3 F6 O3 S



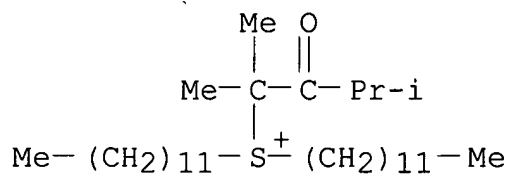
RN 677351-64-3 ZCA

CN Sulfonium, didodecyl(1,1,3-trimethyl-2-oxobutyl)-, salt with  
7,7-dimethyl-2-oxobicyclo[2.2.1]heptane-1-methanesulfonic acid (1:1)  
(9CI) (CA INDEX NAME)

CM 1

CRN 677351-63-2

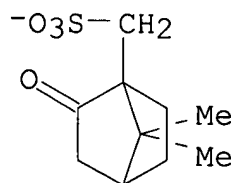
CMF C31 H63 O S



CM 2

CRN 55077-28-6

CMF C10 H15 O4 S



IT 677351-34-7 677351-39-2 677351-41-6

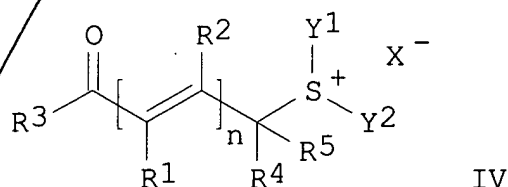
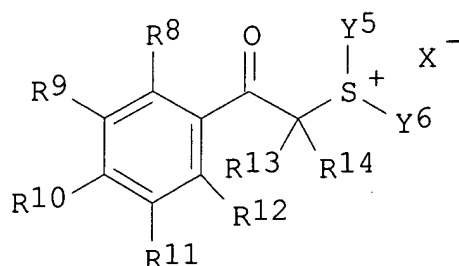
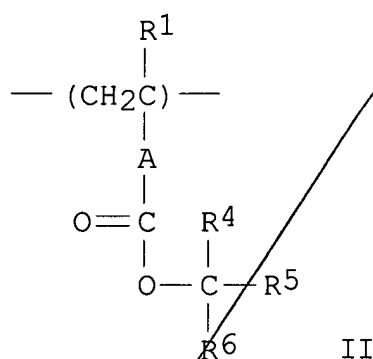
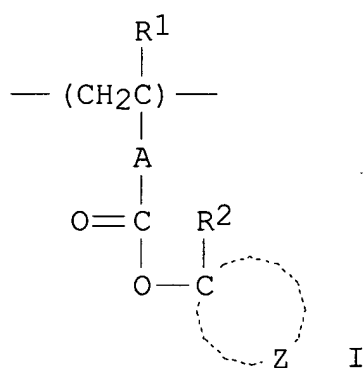
677351-62-1 677351-64-3

(acid generator; photosensitive compn. and acid generator)

L16 ANSWER 5 OF 14 ZCA COPYRIGHT 2005 ACS on STN

140:311995 Positive resist composition and pattern formation method.  
 Nishiyama, Fumiyuki; Sato, Kenichiro; Kodama, Kunihiro (Fuji Photo  
 Film Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2004063827 A1  
 20040401, 56 pp. (English). CODEN: USXXCO. APPLICATION: US  
 2003-669603 20030925. PRIORITY: JP 2002-287252 20020930; JP  
 2002-287393 20020930.

GI



AB A pos. resist compn. comprising: (A) a resin having alicyclic hydrocarbon groups in side chains, contg. repeating units of general formulas I and II (R1 = H, alkyl; A = linkage group, R2 = C1-4-alkyl; Z = group forming an alicyclic hydrocarbon group together with the carbon atom; R4-R6 = hydrocarbon group, alicyclic hydrocarbon) which increases the soly. in an alkali developing soln. by the action of an acid; and (B) a particular sulfonium compd. having a general structures of formulas III and IV (R1-R3 = H, alkyl, alkenyl, aryl, alkoxy; R4, R5 = H, cyano, alkyl, aryl, alkoxy; Y1, Y2 = alkyl, aryl, aralkyl, heteroatom-contg. arom. group; n = 1-4; R8-R12 = H, nitro, halogen, alkyl, alkoxy, alkyloxycarbonyl, aryl, acylamino, with the proviso that at least two of R8-R12 may be bonded with each other to form a ring; R13 = H,

cyano, alkyl, aryl; R14 = alkyl, aryl; Y5, Y6 = alkyl, aryl, aralkyl, heteroatom-contg. arom. group, Y5 and Y6 may be bonded with each other to form a ring; X- = non-nucleophilic anion) which is capable of generating an acid upon irradiation with an actinic ray or radiation. The object of the present invention is to provide a positive resist compound that is used suitably in micro-photofabrication utilizing far UV light, notably ArF excimer laser beam, and offers excellent line edge roughness performance and excellent pattern collapse performance.

IT **610301-28-5**

(photoacid generator; positive resist compound and pattern formation method)

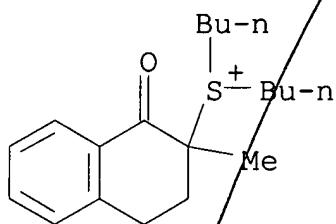
RN 610301-28-5 ZCA

CN Sulfonium, dibutyl(1,2,3,4-tetrahydro-2-methyl-1-oxo-2-naphthalenyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 610301-27-4

CMF C19 H29 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$\text{-O}_3\text{S- (CF}_2\text{)}_3\text{-CF}_3$

IT **610301-28-5**

(photoacid generator; positive resist compound and pattern formation method)

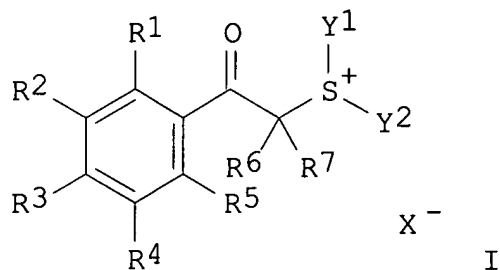
L16 ANSWER 6 OF 14 ZCA COPYRIGHT 2005 ACS on STN

140:207460 Soft x-ray sensitive resist resin composition for semiconductor device fabrication. Uenishi, Kazuya; Kodama, Kunihiro; Fujimori, Toru (Fuji Photo Film Co., Ltd., Japan). Jpn.



Kokai Tokkyo Koho JP 2004053934 A2 20040219, 43 pp. (Japanese).  
 CODEN: JKXXAF. APPLICATION: JP 2002-211384 20020719.

GI



AB The title compn. contains an alkali-solubilizable resin by reacting with an acid and a light- or radiation-sensitive acid generator, wherein the resin has functional group -O-C(R1a)(R2a)-O-W-O-R3a (R1a-2a = H, C1-4 alkyl; W = 2-valent org. group; R3a = C11-20 alkyl, C11-30 aryl, C12-30 aralkyl) and wherein the acid generator has general structure I (R1-5 = H, nitro, halo, alkyl, etc.; R6 = H, cyano, alkyl, aryl; R7 = alkyl, aryl; Y1-2 = alkyl, aryl, aralkyl, etc.; X- = non-nucleophilic anion). The compn. shows good sensitivity and provides photoresist of high resolu., good pattern profile, LER properties, and high dry etching-resistance.

IT **610301-28-5**

(acid generator; soft x-ray sensitive resist resin compn.)

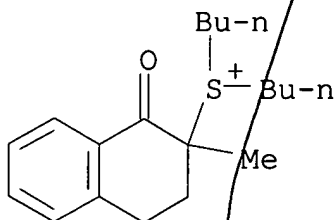
RN 610301-28-5 ZCA

CN Sulfonium, dibutyl(1,2,3,4-tetrahydro-2-methyl-1-oxo-2-naphthalenyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 610301-27-4

CMF C19 H29 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

 $\text{-O}_3\text{S- (CF}_2\text{)}_3\text{-CF}_3$ IT **610301-28-5**

(acid generator; soft x-ray sensitive resist resin compn.)

L16 ANSWER 7 OF 14 ZCA COPYRIGHT 2005 ACS on STN

139:314532 Radiation sensitive composition and compound. Kodama, Kunihiro (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 1353225 A2 20031015, 99 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK. (English). CODEN: EPXXDW. APPLICATION: EP 2003-7989 20030410. PRIORITY: JP 2002-108104 20020410; JP 2002-240661 20020821.

AB The present invention relates to a stimulation sensitive compn. used for a semiconductor prodn. process such as IC, a liq. crystal, the prodn. of a circuit substrate such as a thermal head, further, other photo application system, lithog. printing, an acid curing compn., a radical curing compn. and the like. The present invention relates to a stimulation sensitive compn. comprising: (A) a compd. represented by:  $\text{ArC(=O)CR}_6\text{R}_7\text{S+Y}_1\text{Y}_2\text{X-}$  (Ar = aryl or arom. group contg. a hetero atom;  $\text{R}_6$  = H, cyano, alkyl, aryl group;  $\text{R}_7$  = monovalent org. group;  $\text{Y}_1,2$  = alkyl, aryl, aralkyl, etc.;  $\text{X-}$  = non-nucleophilic anion) which is capable of generating an acid or a radical by stimulation from the external. (B) a resin.

IT **592544-87-1 610301-28-5 610301-32-1**

(acid generating agent; radiation sensitive resist compn. for semiconductor prodn. process contg.)

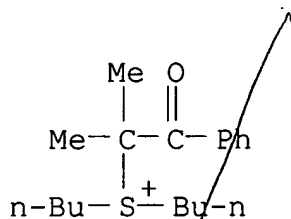
RN 592544-87-1 ZCA

CN Sulfonium, dibutyl(1,1-dimethyl-2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 592544-86-0

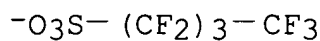
CMF C18 H29 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



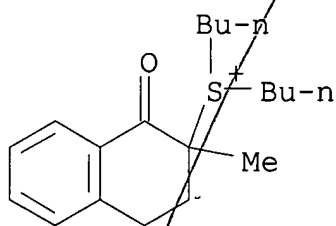
RN 610301-28-5 ZCA

CN Sulfonium, dibutyl(1,2,3,4-tetrahydro-2-methyl-1-oxo-2-naphthalenyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 610301-27-4

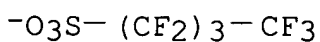
CMF C19 H29 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



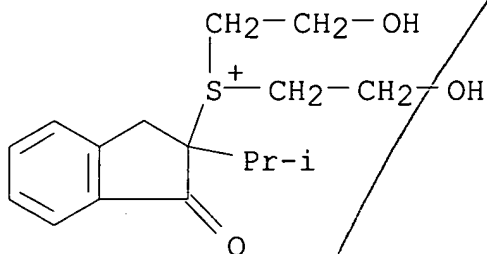
RN 610301-32-1 ZCA

CN Sulfonium, [2,3-dihydro-2-(1-methylethyl)-1-oxo-1H-inden-2-yl]bis(2-hydroxyethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-

butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

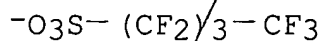
CM 1

CRN 610301-31-0  
CMF C16 H23 O3 S



CM 2

CRN 45187-15-3  
CMF C4 F9 O3 S



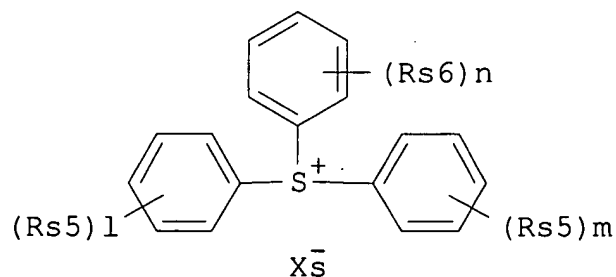
IT 592544-87-1 610301-28-5 610301-32-1

(acid generating agent; radiation sensitive resist compn. for semiconductor prodn. process contg.)

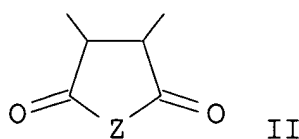
L16 ANSWER 8 OF 14 ZCA COPYRIGHT 2005 ACS on STN

139:237702 Positive-working photosensitive composition containing sulfonium salt photoacid. Sato, Kenichiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003255542 A2 20030910, 79 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-57480 20020304.

GI



I



II

AB The pos.-working photosensitive compn. comprises (1) a sulfonium salt photoacid represented by I ( $R_{s4-6}$  = alkyl, cycloalkyl, etc.;  $l = 1-5$ ;  $m, n = 0-5$ ;  $X_{s-} = R-SO_3-$ ; and  $R$  = aliph. or arom. hydrocarbon), (2) a resin which increases its soly. upon an interaction with an acid and has repeating units represented by  $[HR_{1a}C-CH(OR_{2a})]$  and II ( $R_{1a} = H$ , hydrocarbon;  $R_{2a} = \text{hydrocarbon}$ ; and  $Z = O$ , etc.), and (3) a mixed solvent of (a) and (b) or (a) and (c): (a) propylene glycol monoalkylether alkoxylate; (b) propylene glycol monoalkyl ether, alkyl lactate, alkyl alkoxypropionate; and (c) .gamma.-butyrolactone, ethylene carbonate, and propylene carbonate. The compn. has excellent halftone phase shift mask property.

IT **592544-87-1**

(photoacid; pos.-working photosensitive compn. contg. sulfonium salt photoacid)

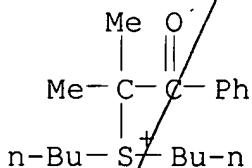
RN 592544-87-1 ZCA

CN Sulfonium, dibutyl(1,1-dimethyl-2-oxo-2-phenylethyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluorobutanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 592544-86-0

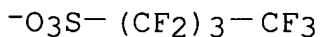
CMF C18 H29 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



IT **592544-87-1**

(photoacid; pos.-working photosensitive compn. contg. sulfonium salt photoacid)

L16 ANSWER 9 OF 14 ZCA COPYRIGHT 2005 ACS on STN

120:76709 Study of Anh's theory for .alpha.-thiolated cyclohexanones.

Sanz, M. J.; Alcazar, V.; Moran, J. R.; Anaya, J. (Fac. Cienc. Quim., Univ. Salamanca, Salamanca, 37008, Spain). *Anales de Quimica*, 88(5-6), 596-600 (Spanish) 1992. CODEN: ANQUEX. ISSN: 1130-2283. OTHER SOURCES: CASREACT 120:76709.

GI For diagram(s), see printed CA Issue.

AB The relative rates of NaBH<sub>4</sub> redn. of the fixed conformation cyclohexanones I increases in the order: I (R = MeS) < III < I (R = SO<sub>2</sub>Me) < II - the relative rates are: 1 < 2 < 7 < 15. The products of these reactions are the corresponding cyclohexanols IV (R<sub>1</sub> = H, R<sub>2</sub> = OH). The redn. of I[R = H(Ia)] >> II and occurs with a change in the stereochem. to give IV (R<sub>1</sub> = OH, R<sub>2</sub> = H); the relative rate of Ia is 30. The redn. rate of I [R = S+Me<sub>2</sub>(Ib)], while not directly comparable to the other I, was detd. relative to that of PhCOMe (V); Ib >>>> V >>> Ia - relative rates are reesp., 11 .times. 103, 780, and 30. The results do not support Anh's theory. Lone pair interactions in the S contg. cyclohexanones were discussed.

IT **152252-44-3P** ?

(prepn., spectra, and hydride redn. of, kinetics of)

RN 152252-44-3 ZCA

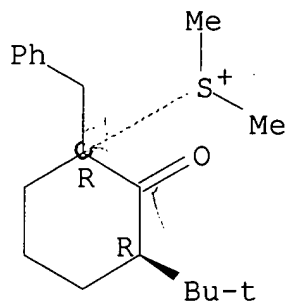
CN Sulfonium, [3-(1,1-dimethylethyl)-2-oxo-1-(phenylmethyl)cyclohexyl]dimethyl-, trans-, tetrafluoroborate(1-)  
(9CI) (CA INDEX NAME)

CM 1

CRN 152252-43-2

CMF C19 H29 O S

Relative stereochemistry.

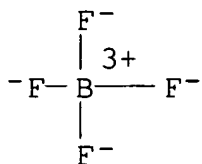


CM 2

CRN 14874-70-5

CMF B F4

CCI CCS



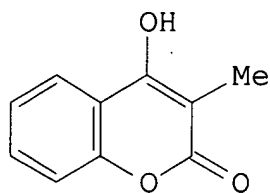
IT 152252-44-3P

(prepn., spectra, and hydride redn. of, kinetics of)

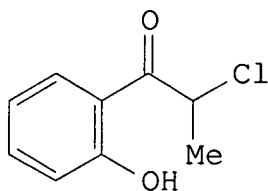
L16 ANSWER 10 OF 14 ZCA COPYRIGHT 2005 ACS on STN

114:164533 Reaction of 4-hydroxycoumarin derivatives with activated dimethyl sulfoxide. Appendino, Giovanni; Tagliapietra, Silvia; Nano, Gian Mario; Palmisano, Giovanni (Dip. Sci. Tecnol., Farmaco, Turin, 10125, Italy). Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (12), 2305-9 (English) 1989. CODEN: JCPRB4. ISSN: 0300-922X. OTHER SOURCES: CASREACT 114:164533.

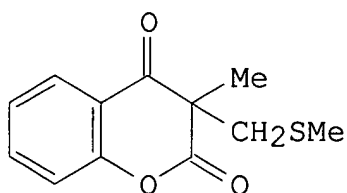
GI



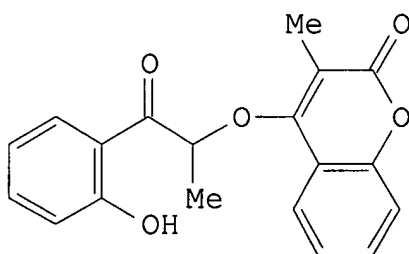
I



II



III



IV

AB The Swern reaction of 3-alkyl-4-hydroxycoumarins, e.g., I, affords in high yield .alpha.-chloro-.alpha.-alkyl-o-hydroxyacetophenone derivs., e.g., resulting from the halogenodecarbonylation of the pyranone ring. On a model compd., other activators of DMSO (TFAA-P4010, DCC-SO3-pyridine) gave mixts. of methylthiomethyl derivs., e.g., III, accompanied by dimeric product IV in the case of P4010. The formation of the halogenated acetophenones and the dimeric product can be rationalized assuming the initial formation

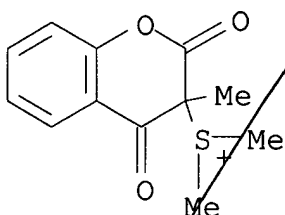
of a chromandionyl sulfonium salt, followed by nucleophilic displacement by the chloride counterion or by the unchanged 4-hydroxycoumarin. The resulting 3,3-disubstituted chromandiones are then hydrolytically decarboxylated during the aq. work-up.

IT **127970-01-8**

(proposed intermediate in Swern oxidn. of hydroxymethylcoumarin)

RN 127970-01-8 ZCA

CN Sulfonium, (3,4-dihydro-2,4-dioxo-3-methyl-2H-1-benzopyran-3-yl)dimethyl-, chloride (9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

IT **127970-01-8**

(proposed intermediate in Swern oxidn. of hydroxymethylcoumarin)

L16 ANSWER 11 OF 14 ZCA COPYRIGHT 2005 ACS on STN

100:120601 Synthesis and spontaneous resolution by crystallization of R,S-(+,-)-dimethyl(1-methyl-2-oxo-2-phenylethyl)sulfonium bromide. X-ray structure and absolute configuration of the R-enantiomer. Dossena, Arnaldo; Marchelli, Rosangela; Armani, Elisabetta; Fava, Giovanna Gasparri; Ferrari Belicchi, Marisa (Ist. Chim. Org., Univ. Parma, Parma, 43100, Italy). Journal of the Chemical Society, Chemical Communications (21), 1196-7 (English) 1983. CODEN: JCCCAT. ISSN: 0022-4936.

AB Bromination of PhCOEt with Me<sub>3</sub>CBr-DMSO at 65.degree. for 24 h gave 90% PhCOCHMeBr, which on treatment with Me<sub>2</sub>S for 24 h gave 80% PhCOCHMeS+Me<sub>2</sub> Br<sup>-</sup> (I). Treatment of PhCOMe with Me<sub>3</sub>CBr-DMSO gave 90% PhCOCH<sub>2</sub>S+Me<sub>2</sub> Br<sup>-</sup>. I underwent spontaneous resolu. on crystn. from MeOH-Et<sub>2</sub>O to give crystals of the R-enantiomer, as detected by x-ray crystallog. anal.

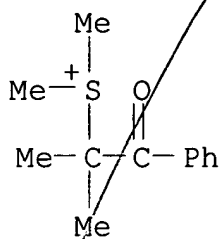
IT **88653-63-8P**

(prepn. of)

RN 88653-63-8 ZCA

CN Sulfonium, (1,1-dimethyl-2-oxo-2-phenylethyl)dimethyl-, bromide (9CI) (CA INDEX NAME)





IT **88653-63-8P**  
(prepn. of)

L16 ANSWER 12 OF 14 ZCA COPYRIGHT 2005 ACS on STN

97:72009 Thermal reactions of phenyl derivatives of dimethylsulfonium 1-aryol-6-oxo-2,4-hexadienylide. A remarkable example of reactions controlled by intramolecular steric interferences. Toda, Takashi; Tokida, Akihiko; Mukai, Toshio (Fac. Sci., Tohoku Univ., Sendai, 980, Japan). Chemistry Letters (5), 763-6 (English) 1982. CODEN: CMLTAG. ISSN: 0366-7022. OTHER SOURCES: CASREACT 97:72009.

AB Thermal reactions of  $\text{RCOC}-(\text{S}+\text{Me}_2)\text{CPh:CR}_1\text{CPh:CR}_2\text{COPh}$  ( $\text{R} = \text{aryl}$ ,  $\text{R}_1$ ,  $\text{R}_2 = \text{H}$ ,  $\text{Ph}$ ) showed multiple mode of reactivities and gave a variety of products differing in the no. and positions of the Ph groups. Those facts were interpreted in terms of the reaction paths controlled by degree of intramol. steric interferences of the Ph groups.

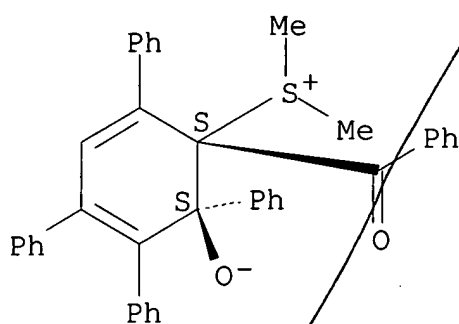
IT **82562-18-3P 82562-19-4P 82562-22-9P**  
**82562-23-0P 82562-26-3P 82562-27-4P**  
**82562-28-5P 82562-29-6P**

(formation of, from open-chain hexadienylide, and benzoate elimination from)

RN 82562-18-3 ZCA

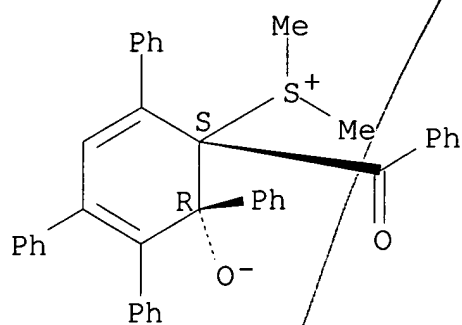
CN Sulfonium, (1-benzoyl-6-hydroxy-2,4,5,6-tetraphenyl-2,4-cyclohexadien-1-yl)dimethyl-, inner salt, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.



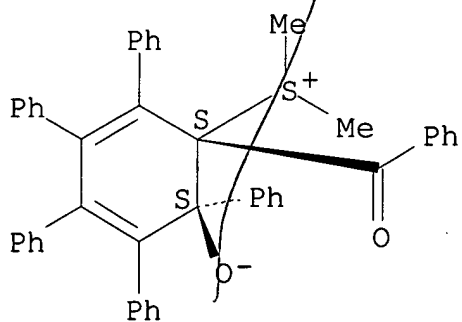
RN 82562-19-4 ZCA  
 CN Sulfonium, (1-benzoyl-6-hydroxy-2,4,5,6-tetraphenyl-2,4-cyclohexadien-1-yl)dimethyl-, inner salt, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.



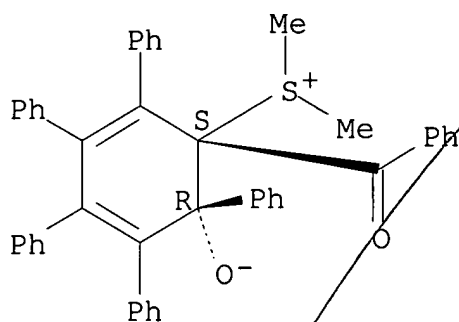
RN 82562-22-9 ZCA  
 CN Sulfonium, (1-benzoyl-6-hydroxy-2,3,4,5,6-pentaphenyl-2,4-cyclohexadien-1-yl)dimethyl-, inner salt, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.



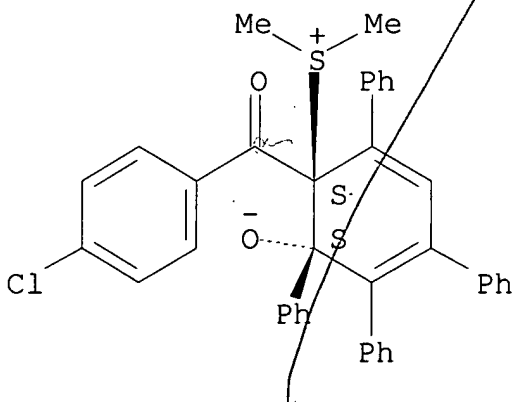
RN 82562-23-0 ZCA  
 CN Sulfonium, (1-benzoyl-6-hydroxy-2,3,4,5,6-pentaphenyl-2,4-cyclohexadien-1-yl)dimethyl-, inner salt, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.



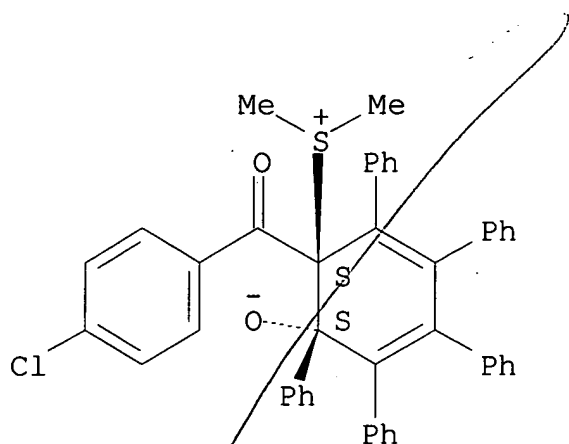
RN 82562-26-3 ZCA  
 CN Sulfonium, [1-(4-chlorobenzoyl)-6-hydroxy-2,4,5,6-tetraphenyl-2,4-cyclohexadien-1-yl]dimethyl-, inner salt, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 82562-27-4 ZCA  
 CN Sulfonium, [1-(4-chlorobenzoyl)-6-hydroxy-2,3,4,5,6-pentaphenyl-2,4-cyclohexadien-1-yl]dimethyl-, inner salt, trans- (9CI) (CA INDEX NAME)

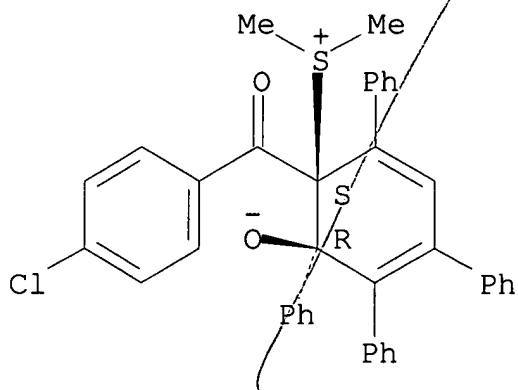
Relative stereochemistry.



RN 82562-28-5 ZCA

CN Sulfonium, [1-(4-chlorobenzoyl)-6-hydroxy-2,4,5,6-tetraphenyl-2,4-cyclohexadien-1-yl]dimethyl-, inner salt, cis- (9CI) (CA INDEX NAME)

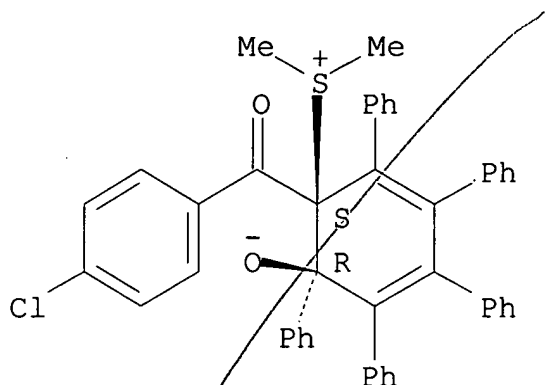
Relative stereochemistry.



RN 82562-29-6 ZCA

CN Sulfonium, [1-(4-chlorobenzoyl)-6-hydroxy-2,3,4,5,6-pentaphenyl-2,4-cyclohexadien-1-yl]dimethyl-, inner salt, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.

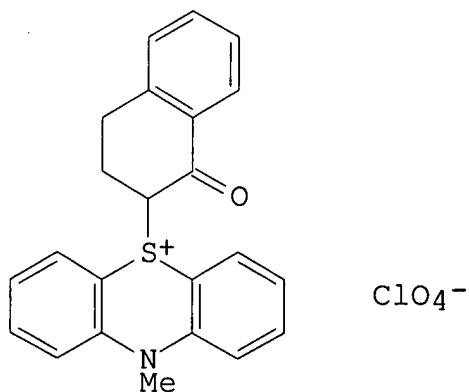


IT 82562-18-3P 82562-19-4P 82562-22-9P  
 82562-23-0P 82562-26-3P 82562-27-4P  
 82562-28-5P 82562-29-6P

(formation of, from open-chain hexadienylide, and benzoate elimination from)

L16 ANSWER 13 OF 14 ZCA COPYRIGHT 2005 ACS on STN  
 87:23182 Ion radicals. 39. Reactions of 10-methyl- and 10-phenylphenothiazine cation radical perchlorates with ketones. Padilla, A. Gregory; Bandlish, Baldev K.; Shine, Henry J. (Dep. Chem., Texas Tech. Univ., Lubbock, TX, USA). Journal of Organic Chemistry, 42(11), 1833-6 (English) 1977. CODEN: JOCEAH. ISSN: 0022-3263. OTHER SOURCES: CASREACT 87:23182.

GI



I

AB Reactions of 10-methyl- and 10-phenylphenothiazine cation radical perchlorate with MeCOEt, cyclopentanone, cyclohexanone, and 1-tetralone gave oxoalkyl sulfonium perchlorates, e.g., I, in which

substitution at the .alpha.-position of the ketones had occurred. Similar reactions were carried out between 10-methylphenothiazine and Me<sub>2</sub>CHCOMe, MeCOPh, and 1-indanone. Several of the sulfonium salts were converted into the corresponding ylides by treatment with base. Reaction of I with nucleophiles gave good yields of 2-substituted indanones.

IT **61723-19-1P**

(prepn. of)

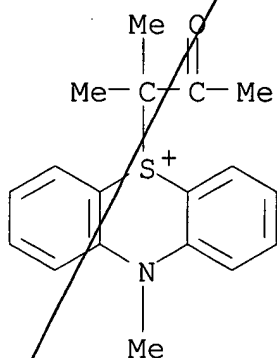
RN 61723-19-1 ZCA

CN 10H-Phenothiazinium, 5-(1,1-dimethyl-2-oxopropyl)-10-methyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 61723-18-0

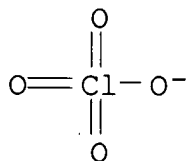
CMF C18 H20 N O S



CM 2

CRN 14797-73-0

CMF Cl O4



IT **61723-19-1P**

(prepn. of)

L16 ANSWER 14 OF 14 ZCA COPYRIGHT 2005 ACS on STN

71:123826 Cyclopropylsulfonium salts by reaction of sulfonium ylides and

dimethylvinylsulfonium bromide. Schmidt, Gerhard; Gosselck, Juergen (Univ. Giessen, Giessen, Fed. Rep. Ger.). Tetrahedron Letters (39), 3445-8 (German) 1969. CODEN: TELEAY. ISSN: 0040-4039.

GI For diagram(s), see printed CA Issue.

AB Treatment of  $\text{H}_2\text{C:CHS} + \text{Me}_2\text{Br}^-$  (I) with an equimolar amt. of carbonyl stabilized  $\text{RCOC-HS} + \text{Me}$  (II,  $\text{R} = \text{OEt}, \text{Ph}, \text{p-BrC}_6\text{H}_4, \text{p-O}_2\text{N-C}_6\text{H}_4$ ) in abs. alc. and cleavage of  $\text{Me}_2\text{S}$  from the exothermic reaction gave the cyclopropylsulfonium salts (IIIa-d), isolated as picrylsulfonates (IIIa, m. 138-41.degree. (77% yield); IIIb, m. 208-9.degree., 33%; IIIc, m. 209.degree., 73%; IIId, m. 210.degree., 58%) or as tetraphenylborate (IIIb, m. 199-201.degree., 31%). The reaction proceeded by intramol. reyclidation through the intermediate states  $\text{RCOCH}(\text{S} + \text{Me}_2)\text{CH}_2\text{C}^- \text{HS} + \text{Me}_2\text{Br}^-$  and  $\text{RCOC}-(\text{S} + \text{Me}_2)\text{CH}_2\text{CH}_2\text{S} + \text{Me}_2\text{Br}^-$ . Treatment of  $\text{RCOCH}_2\text{Br}$  with thiophane gave the sulfonium bromides (IV,  $\text{R} = \text{OEt}, \text{Ph}, \text{p-BrC}_6\text{H}_4$ ) (IVa-c). IVa, m. 122-4.degree., treated with  $\text{NaOH}$  yielded 65% yield (V,  $\text{R} = \text{OEt}$ ) (Va),  $n_{\text{D}}^{20} 1.5426$ . Similarly were prepd. in 80% yield Vb, m. 82-5.degree., and a viscous oily Vc. Va-c treated with I in abs. alc. split off  $\text{Me}_2\text{S}$  and yielded the bromides (VIa-c) characterized as VIa tetraphenylborate, m. 135-40.degree. (yield 52%); VIb picrylsulfonate, m. 202.degree. (yield 68%); VIc picrylsulfonate, m. 211.degree. (yield 73%); VIc bromide, m. 146.degree.; VIc iodide, m. 153-6.degree.. IIIa in abs. alc. treated with I several days and the mixt. filtered from pptd. cryst.  $\text{Me}_3\text{SBr}$  yielded 14.5% 1-(methylthio)-1-carbethoxycyclopropane, b<sub>10</sub> 77-81.degree.,  $n_{\text{D}}^{20} 1.4522$ .

IT **25709-52-8P 25709-53-9P 25709-54-0P**  
**25794-63-2P**

(prepn. of)

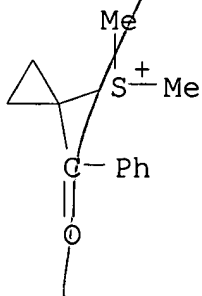
RN 25709-52-8 ZCA

CN Sulfonium, (1-benzoylcyclopropyl)dimethyl-, 2,4,6-trinitrobenzenesulfonate (8CI) (CA INDEX NAME)

CM 1

CRN 46246-93-9

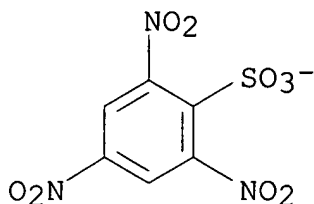
CMF C12 H15 O S



CM 2

CRN 16655-63-3

CMF C6 H2 N3 O9 S



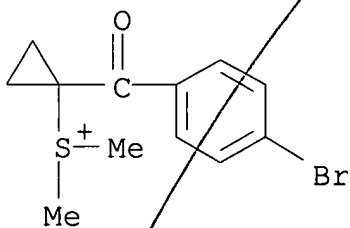
RN 25709-53-9 ZCA

CN Sulfonium, [1-(p-bromobenzoyl)cyclopropyl]dimethyl-,  
2,4,6-trinitrobenzenesulfonate (8CI) (CA INDEX NAME)

CM 1

CRN 46368-62-1

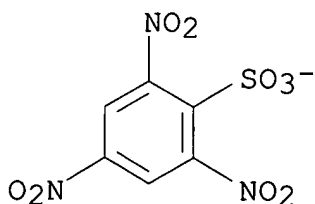
CMF C12 H14 Br O S



CM 2

CRN 16655-63-3

CMF C6 H2 N3 O9 S



RN 25709-54-0 ZCA

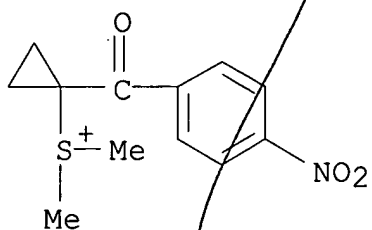
CN Sulfonium, dimethyl[1-(p-nitrobenzoyl)cyclopropyl]-, salt with  
2,4,6-trinitrobenzenesulfonic acid (1:1) (8CI) (CA INDEX NAME)



CM 1

CRN 46759-46-0

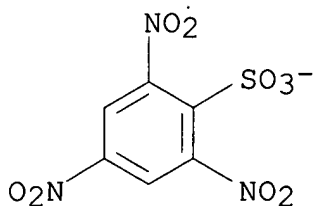
CMF C12 H14 N O3 S



CM 2

CRN 16655-63-3

CMF C6 H2 N3 O9 S



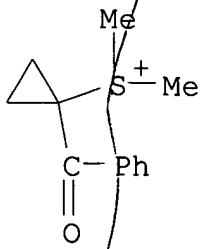
RN 25794-63-2 ZCA

CN Sulfonium, (1-benzoylcyclopropyl)dimethyl-, tetraphenylborate(1-)  
(8CI) (CA INDEX NAME)

CM 1

CRN 46246-93-9

CMF C12 H15 O S

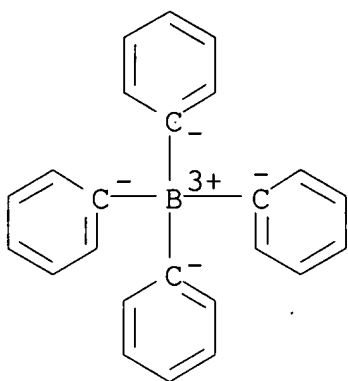


CM 2

CRN 4358-26-3

CMF C24 H20 B

CCI CCS



IT 25709-52-8P 25709-53-9P 25709-54-0P  
25794-63-2P  
(prepn. of)